47th Year June 20, 1907 Number 25

AMERICAN BEE JOURNAL

N. P. ANDERSON AND APIARY, OF MINNEAPOLIS, MINN.
(See page 534)

APIARY AND HOUSE-APIARY OF HERMAN RAUCHFUSS, OF DENVER, COLO.

THIRTY-TWO PAGE NUMBER

American Bee Journal

THE AMERICAN BEE JOURNAL

PUBLISHED WEEKLY BY

GEORGE W. YORK & COMPANY

118 W. Jackson Blvd., Chicago, Ill.

IMPORTANT NOTICES.

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; all other countries in the Postal Union, 50 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec07" on your label shows that it is paid to the end of December, 1907.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your wrapper-label, which shows that the money has been received and credited.

Advertising Rate, per Agate Line, 10c.

14 lines make one inch.
Nothing less than ¼ inch accepted.

Time Discounts.		Space Discounts.	
4 times	5 per cent	100 lines	5 per cent
13 "	10 "	500 "	10 "
26 "	20 "	1000 "	20 "
52 "	30 "	2000 "	30 "

These rates are subject to either time or space discounts, at choice, but not both.

Reading Notices, 25 cents, count line, subject to the above discounts.

Goes to press Monday morning.

National Bee-Keepers' Association

Objects of the Association.

1st.—To promote the interests of its members.
2d.—To protect and defend its members in their awful rights.
3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, $1.00.

General Manager and Treasurer—
N. E. FRANCE, Platteville, Wis.

☞ If more convenient, Dues may be sent to the publishers of the American Bee Journal.

Bee-Keepers' Souvenir Cards
are just the thing.
We send them by Return Mail

O WONT YOU BEE MY HONEY
AND CHEER THIS LONELY HEARTY
I CANNOT BEAR TO LOSE YOU
FOR I WOULD HUG YOU ALL THE TIME
AND WE WOULD NEVER PART

As most of our readers know, we have got tenout a Souvenir Postal Card for bee-keepers. The cuts herewith shcw the card in réduced size, and but one color, while the real card is printed in 4 colors. It could also be sent to honey-customers, to remind them that it is time to buy more honey, etc. There are many uses to which this Card can be put.

Prices—postpaid: 3 cards for 10c (stamps or silver), or 5 FREE with the American Bee Journal one year at $1.00; 10 for 25c. There is a blank space on the card about 2x2½ inches in size for writing. Send all orders to

GEORGE W. YORK & CO.
118 W. Jackson Blvd., CHICAGO, ILL.

Now is the Time to Order Your

BEE-SUPPLIES

AND SAVE MONEY

It will cost you only one cent for a postal-card to get our **delivered prices on Dovetailed Hives, Sections, Section-Holders, Separators, Brood-Frames, Foundation, Smokers, Extractors, Shipping-Cases, etc.** It may mean a saving to you of many dollars. It is the natural advantage we have over others that enables us to make you the Best Price. There are no better goods than ours, and we GUARANTEE SATISFACTION or REFUND your MONEY.

We MANUFACTURE and keep in stock all standard Bee-Goods, and can ship promptly.

Minnesota Bee-Keepers' Supply Co.

JOHN DOLL & SON, Proprietors,

Nicollet Island, No. 33. MINNEAPOLIS, MINN.

Mention Bee Journal when writing.

HOW TO PAINT

Buggies, farm wagons, farming tools, barns, outbuildings and houses often need painting. **"Everybody's Paint Book,"** written by a thoroughly practical painter, will be found a complete guide to the art of outdoor and indoor painting. It is designed for the special use of those who wish to do **their own painting.** It gives practical lessons in plain painting, **varnishing, polishing, staining, paper hanging, kalsomining, etc.**

It also tells how to **renovate furniture** and gives many hints on artistic work **for decorating a home.** Precise directions are given for mixing paints for all purposes.

If farming tools and farm vehicles are kept painted, they will last twice as long, and anybody can do the work with the aid of this book. It is handsomely and substantially bound in cloth. A copy will be sent postage prepaid on receipt of price **$1.00**

SPECIAL OFFERS

For $1.60 we will send the above book and the Weekly American Bee Journal one year; or for $1.40 we will send the Paint book and a Standard-Bred Untested Italian Queen. Address

GEORGE W. YORK & CO., 118 W. Jackson Blvd., Chicago, Ill.

TENNESSEE-BRED QUEENS

All from Extra-Selected Mothers

3-band from Imported Dark Leather, Moore's Long-Tongue, or my own. Goldens from Laws, Doolittle's or my own. Caucasians and Carniolans from direct Imported.

AFTER APRIL 15TH.

	Italians Before July 1st			After July 1st			CARNIOLANS			CAUCASIANS		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested	$ .75	$ 4.00	$ 7.50	$ .60	$ 3.25	$ 6.00	$ .85	$ 4.50	$ 8.00	$ .95	$ 5.00	$ 8.50
Select Untested	1.00	5.00	9.00	.75	4.25	8.00	1.10	5.50	9.50	1.20	6.00	10.00
Tested	1.50	8.00	15.00	1.25	6.50	12.00	1.60	8.50	15.50	1.70	9.00	16.00
Select Tested	2.00	10.00	18.00	1.50	8.00	15.00	2.10	10.50	18.50	2.20	11.00	19.00

Straight 5-band Golden Breeders.....$10.00
Select Golden Breeders 3.00
" 3-band " 3.00
" Carniolan " 3.10

Select Caucasian Breeders .....$ 3.25
1 full colony without queen in 8-frame dovetailed hive..... 6.00

Select the Queen wanted, and add the price to the above prices.

Discounts on large orders. Contracts with dealers a specialty. No bee-disease has ever been in this section.

17A4t 21Dtf **JOHN M. DAVIS, Spring Hill, Tenn.**

Please Mention the American Bee Journal when writing Advertisers

American Bee Journal

PURE ITALIAN BEES FOR SALE

Full colonies, in up-to-date hives; Nuclei and choice Queens.

Hershiser Wax-Press and other Lewis Bee-Supplies. Good Goods and Prompt Shipment.

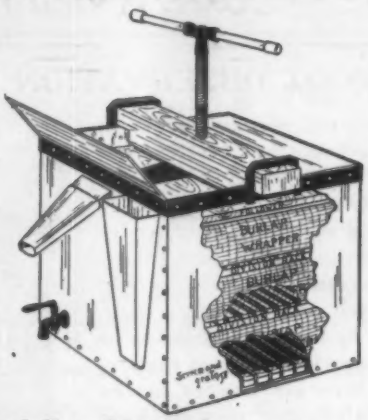
Any bee-keeper can save money, as long as the goods last, on almost any supplies needed next season, by taking advantage of our

Fire Sale of Bee and Poultry Supplies

Have sold several thousand dollars worth of these goods, and no complaint.

☞ Send for list of Slightly Damaged Goods to select from at Reduced Prices. Also for 1907 Catalog of New Goods.

Quote us prices on Honey and Beeswax. Honey in 60-pound cans for sale.



H. M. ARND, Proprietor, York Honey and Bee-Supply Co. (Not Inc.)

Long Distance Telephone, North 1559. 191 AND 193 SUPERIOR ST. CHICAGO, ILL.
(Three blocks north and one block east of our old location.)

BEE-KEEPERS

Write us now for our Catalog and get low prices on good, honest,

BEE-KEEPERS' SUPPLIES

Our specialty is making Sections. All other goods up-to-date.

AUG. LOTZ & SON, Cadott, Wis.
10A34t Please mention the Bee Journal.

SOLID GOLDEN QUEENS

Ready for delivery April 1st. Select Untested Queens, $1 each; Tested Queens, $2; Select Tested, $3. You can only get good Queens from the South in the early spring. Book your orders NOW.

H. M. PARKER, JR.
3Atf JAMES ISLAND, S. C.

BEE AND POULTRY SUPPLIES

Bee-Hives, Honey-Boxes, Veils, Smokers, Incubators, Brooders, Egg-Food, etc. Everything needed for the "Busy Bee" and the "Industrious Hen." Prompt shipments.

LEWIS' FAMOUS BEE-WARE. LEE'S POPULAR PRODUCTS FOR POULTRY

Catalog for either, with instructions to beginners—Free.

29Atf **C. M. SCOTT CO. 1005 E. Wash. St., Indianapolis, Ind.**

QUEENS FOR YOU

Golden, Carniolan, Caucasian, and 3-band Italians—your choice. Prices: Untested, 75c; Tested, $1.00. Prices on large quantities or on Bees given on application. Address,

NEW CENTURY QUEEN-REARING CO.
JOHN W. PHARR, Prop., Berclair, Texas.
12Atf Please mention the Bee Journal.

The Rietsche Press

Made of artificial stone. Practically indestructible, and giving entirely satisfactory results. Comb foundation made easily and quickly at less than half the cost of buying from the dealers. Price of Press for L. frame sheets, $2.00. Other sizes, 25 cents extra. Price of the Press making the foundation directly on the wired frames, $2.50, any size wanted.

ADRIAN GETAZ,
45Atf KNOXVILLE, TENN.
Ment'on Bee Journal when writing.

For Sale

50 to 75 cases of two 5-gallon second-hand Cans each. Clean and in good shape. Enquire of C. BECKER, Pleasant Plains, Ill.
22A4t Please mention the Bee Journal.

Queen-Clipping Device Free!

The MONETTE Queen-Clipping Device is a fine thing for use in catching and clipping Queens' wings. It is used by many bee-keepers. Full printed directions sent with each one. We mail it for 25 cents; or will send it **FREE** as a premium for sending us **One New** subscriber to the Bee Journal for a year at $1.00; or for $1.10 we will mail the Bee Journal one year and the Clipping Device. Address,

GEORGE W. YORK & CO.,
CHICAGO, ILL.

"If goods are wanted quick, send to Pouder." **Established 1889**

Full Value, and Then Some

By the Bee-Crank

It is the easiest thing in the world to make promises in an advertisement that it is impossible to fulfill. Indeed, the temptation to do so is so strong that it requires care to avoid it. I have always tried to lean toward moderation, rather than exaggeration.

Instead of complaints of scant treatment, I have received from my customers many letters like the following:

PERU, IND.

WALTER S. POUDER, Indianapolis, Ind.

Dear Sir:—In my capacity as distributing agent for your Bee-Supplies I have been mentally scanning the past. You have sent me **value received** for every dollar that I have ever sent you, and with each shipment some extras thrown in, in the form of promptness, accuracy, care in packing, and so forth. I sincerely thank you for your tokens of appreciation. You will please fill the following order. Very truly yours,

GEO. S. DEMUTH.

I would rather publish a statement of this kind from an unbiased customer, telling what treatment he had actually received than a dozen pages of promises.

Root's Goods at Root's Prices. I give you the advantage of freight-saving, prompt, careful service, and quick deliveries because of special shipping facilities that are equaled by few cities in the country outside of Indianapolis.

Send for my Catalog. It is full of illustrations and descriptions of devices that interest the bee-keeper.

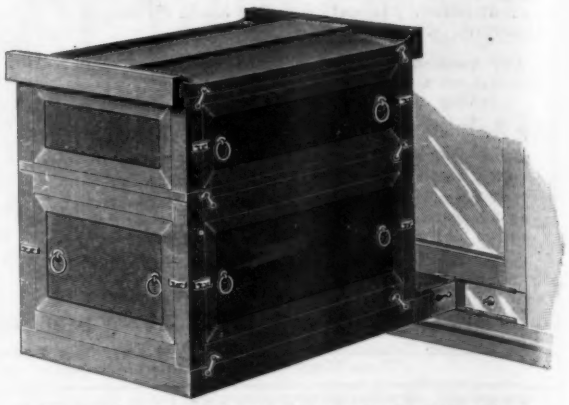
Beeswax Bought. Highest market prices paid. Send by freight or express according to size of package, and attach your name.

Walter S. Pouder 513-515 Massachusetts Avenue
INDIANAPOLIS, INDIANA

Trade Notes
The A. I. Root Company, Medina, Ohio

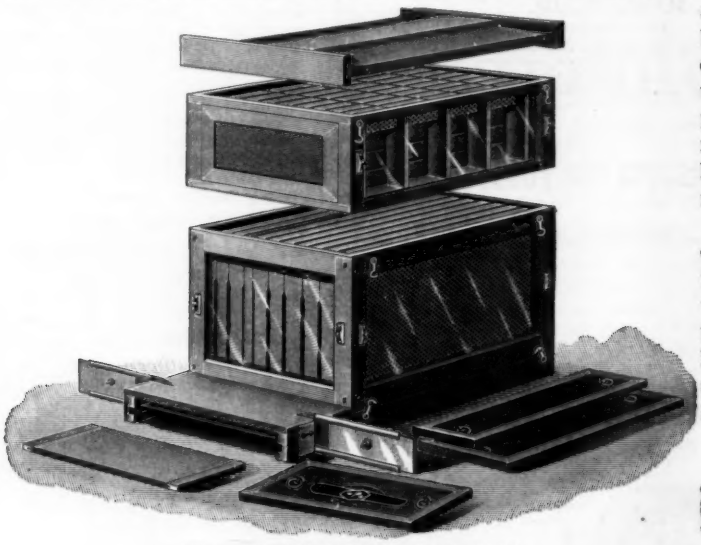
ROOT OBSERVATION HIVE

In recent years there has been an ever-increasing interest in bees as a subject for nature study in the schools, and a corresponding demand for observation hives to facilitate the study of bees at work, without exposing the student directly to them, as is necessary with ordinary hives. To meet this demand we offer several styles and sizes of observation hives. These are made with skeleton frame, with glass in sides and ends of the brood-chamber, and in sides only of the super. Shutters are provided to cover the glass. These shutters have brass rings to handle them by and brass buttons to hold them in place. Brass hooks are also provided to hold the several sections of the hive together. The hives are finished in the natural wood, oiled and varnished, and altogether they are very attractive in appearance. We furnish them regularly in 8-frame, Langstroth depth. The super is fitted for the 4x5x1⅜ plain section. Hives are usually furnished put together and finished. We can supply material in the flat, but it is work for a cabinet-maker who understands his business to put them up, and we do not care to furnish them in flat unless you order one complete as a model.



Observation Hive Inside a Room with Entrance under the Raised Sash.

The bottom is no longer than the hive, and a covered extension is provided to lead the bees out-doors under the window-sash or other opening provided. In the full-sized hive a colony of bees can be kept by a window the year round, or for only a part of the season, as may be desired. The work of the hive, including the building of comb in the sections, can be watched at intervals without opening the hive or disturbing the bees. For work in the school-room before a class we recommend the one-frame hive. With the one-frame observation hive it is necessary to remove the frame of bees and put in a fresh one about once a week at least, for the best results. As a rule, arrangements may be made with a local bee-keeper to provide a frame of bees each Monday morning, returning at end of week.



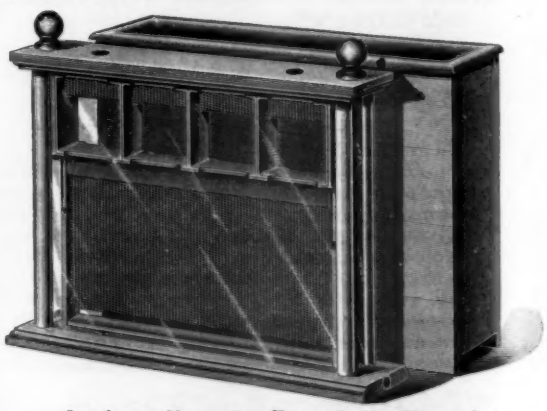
Observation Hive with Panels Removed.

We make one-frame observation hives for L. frames or for Danz. frames and a row of sections above, or the L. frame with a row of sections above. These are provided with a wood case to slip over to shut out the light when you are not watching the bees. We show this one-frame hive and the case in accompanying illustration. This consists of turned-wood corners with glass inserted in grooves in ends as well as the sides.

PRICE-LIST OF OBSERVATION HIVES

Observation Hive (8-frame), complete with super, including frames, sections, glass—and bees with queen	$15.00
Observation Hive (8-frame), complete with super, including frames, sections, glass—no bees	7.50
Observation Hive (8-frame), without frames	7.00
" Super " complete, with sections	2.50
" Hive " without super	5.00
" Brood-chamber, complete, with frames—no cover or bottom	3.75
Observation brood-chamber without frames	3.25
One-frame Observation Hive for Danz. frame, no super, with case	2.50
One-frame Observation Hive for Hoffman L. frames, no super, with case	2.50
One-frame Observation Hive for Danz. frames, with super, with case	3.00
One-frame Observation Hive for Hoffman L. frames, with super, with case	3.00

(For bees and queen in one-frame hive, add $3.00.)



One-frame Observation Hive with Case Removed.

THE A. I. ROOT CO., Medina, Ohio

(Entered at the Post-Office at Chicago as Second-Class Mail-Matter.)

Published Weekly at $1.00 a Year, by George W. York & Co., 118 W. Jackson Blvd.

GEORGE W. YORK, Editor | CHICAGO, ILL., JUNE 20, 1907 | Vol. XLVII—No. 25

Invention of Movable Frames

The editor of the Far-Western Bee-Keeper wields a facile pen, his matter and manner both good, but surely he must have been napping when he wrote: "Dzierzon was the man who first made bees build combs on slats, and starters, which was the beginning of the movable frame."

If credit is to be given for what was done previous to the invention of the movable frame by Langstroth in 1851, as "the beginning of the movable frame," why not go back to the "beginning" at an earlier date of combs built on slats? In Dadant's Langstroth, paragraph 282, occurs the following:

"The bee-keepers of Greece and of Candia seem to have been the first to provide their hives with movable bars, under which bees suspended their combs. Della Rocca mentions these, and gives some engravings of them in his work, published in 1790. In 1838, Dzierzon revived this hive and improved it."

Virgin Loafing on Her Wedding-Trip

The distance to which a virgin flies on her wedding-trip is a matter of practical importance, the question often being asked how far it is safe to be from other bees to make sure virgins shall not meet drones from them. It has been advanced that by noting the length of time a virgin is absent from the hive one can figure upon the distance she has flown. That this is not to be depended upon is shown by the following testimony from Thomas Johnson in the British Bee Journal:

In one case the queen, returning, missed the board and settled heavily on the brick wall, where she remained while I fetched a hand-magnifier from the house and examined her as she sat. Under the glass the drone-trail (a silvery-looking filament) could be plainly seen. The queen remained so long on the wall brushing herself that I began to think she was disabled, but on touching her she took wing, and, after taking one circling flight around the yard, she entered her own hive, and is now at the head of an excellent colony from which I hope to rear more queens this season.

This experience is, I think, valuable, because it is evidence that when a queen is absent on her mating-flight, it is by no means certain that she is on the wing the whole time. While the watching bee-man imagines her flying miles from home to consort with a favored drone from a distant apiary, she may be sitting preening her ruffled "feathers" within his reach, but unnoticed.

Bees and Colors

On another page in this number will be found an article of much interest discussing the color of flowers as related to bees, written by Prof. Gaston Bonnier. It was sent by Mr. Stadler Menhall, as a clipping from the New Orleans Times-Democrat, and was, no doubt, translated from the French. Prof. Bonnier stands high in the council of bee-keepers in France, and what he says is worth considering. He is not likely to antagonize the views of such an authority as Sir John Lubbock without thinking he has good ground for it.

The question whether bees go by sight or scent is an interesting one. When one observes the actions of would-be robber-bees in the apiary, they will be seen sneaking about cracks between hive and cover, where certainly they can see no honey inside, but no doubt can smell it. But watch closely at a hive where desperate attempts are being made to break through, and while most attention may be given to the cracks, one will often see a cluster of bees attacking a solid knot on the side of the hive. Sight, not scent, evidently in that case.

Look again at the bees upon the flowers. Here is a flower that has just been rifled of its sweets, and a bee comes along, looks it over, and quickly leaves it without getting anything from it. Was not the bee, in that case, attracted by sight? Or was there just enough nectar to attract by its odor, and not enough to be worth spending time upon it?

It is quite possible, indeed probable, that both sight and scent play a part, but the careful investigations of Prof. Bonnier seem to give to scent the chief part.

Metal Frame-Spacers

The chief objection urged against metal frame-spacers has been that they would injure the uncapping-knife. Producers of comb honey have protested that it was unfair to them, since their combs were never used for extracting, to deprive them of the advantages of metal spacers just because such spacers might be objectionable when extracting. Now comes Editor Root, who goes so far to think it possible that metal spacers may even be allowed on extracting-combs. He says (Gleanings, 754):

The oft-repeated objection to metal spacers, to the effect that they will interfere with the uncapping-knife, exists more in the imagination than in fact. There are not wanting extracted-honey men who use metal spacers of various sorts; and when we have talked with some of them on the question whether they dulled the uncapping-knife edge on these spacers, they ridiculed the very idea. One of them in particular made the remark that "any one who would dull his knife on a small projection at the end of the frame must be a blundering manipulator." Unless some one will actually testify that the metal spacers make uncapping difficult and annoying, let us scatter this man of straw to the four winds.

"Bees Exterminating Bugs"

C. G. Chevalier sends the following item with the above heading, clipped from the New York Herald:

Professor S. J. Hunter, of the Entomological Department of the [Kansas] State University, who, for the past month, has been collecting and sending free to the farmers of the Southwest, parasite bees to kill the green bugs that have been destroying wheat, received a telegram to-day from Secretary of Agriculture Wilson at Washington, asking for full particulars of this work.

Professor Hunter replied that he had distributed 2000 boxes containing the parasites

American Bee Journal

to Kansas farmers with uniform good results, but that a larger fund was needed to make the work comprehensive and decisive. Reports from Texas and Oklahoma are that the bees have practically exterminated all the bugs in those States.

The likelihood is that the item is substantially correct, only the reporter in the case is not an entomological expert. It is not likely that any bee is a parasite, neither is there any parasite in the case. Put "lady-bug" for "parasite bee," and the story is probably all right. It is well known that the larva of the lady-bug is quite fond of green lice.

Taking Surplus in Olden Times

Dr. Follenius says in Prak. Wegweiser that the introduction of movable combs was the beginning of taking surplus honey in the fall instead of in the following spring. However, that may have been in Germany, was it not the custom in this country to "take up" in the fall, before movable frames were known? The heaviest and the lightest colonies underwent the brimstone ordeal; the heaviest because they had the most honey, and the lightest because they were not likely to survive the winter.

An Average Honey Crop is now promised for the orange-growing district in Southern California. Mr. John Stewart, of San Bernardino county, sent us the following item taken from the Los Angeles Times of June 5:

The honey crop, which is now being gathered, is proving that this is an average season for apiarists, although many cloudy days have decreased the yield of nectar. There are a number of apiaries in the vicinity of Redlands, and these first June days are busy ones for the bee-men.

The season promises to be an average one notwithstanding the cold, wet winter. The fogs are as bad for the bees as rains, for the insects will not work in the fog except in rare cases.

The black sage of the canyons has been the source of most of the honey gathered in the past few weeks. This flower produces the clearest and most delicious honey, which brings the highest price. Next comes the white sage, which makes just as good and nutritious an article, but not quite so white.

The "Muth Ideal Bee-Veil" appears again this week on page 558. It is put out by The Fred W. Muth Co., of Cincinnati, Ohio. The illustration shows the veil so well that a description is hardly necessary. We may say, however, that the center part is made of very light wire-cloth, which is far ahead of the common limp cotton or silk netting which is so often blown against the face so that the bees can easily get at you. This Muth veil is very cool and pleasant to wear. We bespeak for it a large demand among bee-keepers.

A "Pancake Turner" Comb-Leveler.—We have received the following:

Herewith I send a crude drawing of a little affair that I think is the best comb-leveler that I know of. I have used such as have been advertised, but do not think them as good for the purpose as this. I discovered this by experimenting.

Get a common pancake-turner, cut the sides on a slant back to the handle, and round the end of the blade slightly. This can all be done with a pair of tinner's shears. Turn it upside down so as to make a smooth surface on the underside, grind the upper edge to a bevel, and file fine, sharp teeth in it, and the thing is ready for use.

After taking the section in hand place the leveler in the bee-way space and vibrate it from side to side. It will cut as neatly as the reaper sickle does grain.

I send in a separate package some of the clippings which will give an idea of the work it does. I have used this for the last 2 years, and am well pleased with it.

Some time during last year I sent a drawing to the A. I. Root Co., and they seemed to think it very good. I shall prosecute no one for infringing upon my rights, if he should think enough of it to try it.

My bees are doing splendidly in the way of brood-rearing just now; in fact, many of them are very strong. I have sold 2 colonies for $10 each. WM. M. WHITNEY.

Walworth Co., Wis., May 29.

This differs from the Taylor handy comb-leveler in that it allows one to cut down objectionable surface of the comb wherever it may be, without cutting down the whole surface to the same level. Also, the whole work is in sight, allowing one to know just how deep he is cutting.

The Apiary of N. P. Anderson.—We have received the following from Mr. Anderson in reference to his apiary, which is shown on the first page:

The picture of my apiary was taken during the fall of 1906. It contained at that time 36 colonies, having increased from 15, spring count. A part of the colonies were worked for comb honey, some for queen-rearing, and most of them for increase.

The honey crop of 1906 was very light, and here in Minneapolis it closed with the basswood, while a few miles from here, in the country, the bees worked on white clover for 10 days after the basswood ceased; this made my honey-flow very short, and left many unfinished sections; but those will come handy as bait for this year. N. P. ANDERSON.

Amount of Honey Per Acre.—Charles O. Bergstrand, of Amery, Wis., wrote us as follows on June 10:

EDITOR YORK:—To-day I received a copy of The Farmer—a Minnesota farm paper said to have 115,000 readers—which contained the following clipping, which I take the liberty to submit. I think it is stretched a little, otherwise the climate around Preston, Minn., must be more suited for bees than anywhere else that I have heard of. Here is what Mr. M. V. Facey says in The Farmer:

"It is not possible to estimate accurately the amount of income to be derived from the honey-resources of the farm, but it is certainly much greater than our most extravagant estimates. In proof of this I will present a few facts as they have come up in my experience.

"First example is a field of buckwheat of only 5¼ acres, to which a yard of 30 colonies of bees had access. No other buckwheat was near, and the bees most clearly devoted their whole attention to the only available field. It was very much alive each forenoon, and the bees gathered between 750 and 800 pounds per acre therefrom, or an income from honey alone of over $40 per acre. Wild buckwheat will often do as well.

"It has been estimated that a large, thrifty, well-flowered basswood will fully supply a colony during its flow, and I do not think the estimate is out of the way. When clover is secreting nectar, a field of 15 or 20 acres of thick white or alsike clover will keep a good-sized apiary going."

I will be listening with upstretched ears to hear what our "Afterthinker" thinks about the Minnesota climate. I think even Mr. Alexander, of New York, will think, and even say, "That was a bumper report."

The weather here has changed to the better—warm, nice weather all last week. We had a warm, nice rain yesterday and to-day.

CHAS. O. BERGSTRAND.

As Mr. Facey is a reader of the American Bee Journal, we would be pleased to have him to tell us more about the report he sent to The Farmer. Just what an acre of bloom can be depended upon to yield in the shape of honey is an interesting problem. It comes up for solution quite frequently. Perhaps Mr. Facey has the right answer.

The Song of Songs

Poets write of honeysuckles, roses red and lilies white,
Of forget-me-nots and bluebells, and of daises fair to see;
But of all the flowers in all the world in which men take delight,
The basswood and white clover are the sweetest far to me.

Artists paint the towering mountains with their frozen caps of snow;
Picture mighty icebergs floating in the heaving Arctic Sea;
But I love the springtime picture when the earth is all aglow,
And the air is filled with fragrance of the blooming apple-tree.

People rave of song of nightingale, of bobolink and wren,
Of the oriole and robin nesting in the shady tree;
But the song of songs—the melody excelling birds and men—
Is the song of the home-coming, nectar-laden honey-bee. C. H. BENSON.

Bellevue, Mich.

Our Wood Binder (or Holder) is made to take all the copies of the American Bee Journal for a year. It is sent by mail for 20 cents. Full directions accompany. The Bee Journals can be inserted as soon as they are received, and thus preserved for future reference. Or we will send it with the American Bee Journal a year—both for $1.10. Address office of the American Bee Journal.

American Bee Journal

Conducted by J. L. Byer, Mount Joy, Ont.

Queens in Supers

One of the things I could never understand, is *why* Mr. Dadant's queens do not go into the supers where no excluders are used. Is it locality, race of bees, or what? Certainly it is not size of hive, as the hive I use is considerably larger than that used by Mr. Dadant, yet the queens will go into the supers every time where no excluders are used. As intimated, the majority of my bees require supers at once, and on Friday, May 24, the weather having moderated a little, a super of brood-combs was put on each of 4 very strong colonies at the home yard. No excluders were put on, as I wished the queen to occupy these combs so that they could be used for nuclei later on in the season. Friday night the weather turned cold, and remained so till Wednesday evening; yet on examining these supers on Wednesday—more out of curiosity than anything else—sure enough, the queens had established a brood-nest already in the upper stories, one colony having 3 combs (Quinby dimensions) nearly full of eggs.

A Backward Season, Spring Dwindling, Etc.

Friend Byer:—As the season advances (backward) in this locality, prospects do not look at all promising. The bees are doing just a little better than holding their own. I am consoling myself, however, that it will not be necessary for me to buy a gasoline engine to turn my extractor this season.

Feeding for Spring Dwindling.

I had a little experience with a case of spring dwindling a short time ago. The bees from several of my strongest colonies were crawling in great numbers through the grass. I picked up a few of them and found they were filled almost to bursting with pollen. I examined these hives and found them nearly bare of honey. When I commenced feeding, the "dwindling" disappeared. I suppose the bees were trying to eke out a living on pollen. Evidently bees "can not live by (bee)-bread alone."

Bees Moving Eggs or Larvæ

I believe I had an example last season of bees moving eggs or larvæ. A colony with an extracting super over an excluder swarmed. I hived the swarm on the old stand, and during the operation I happened to lift a frame out of the extracting super where I found 2 fine queen-cells. There was not another cell of brood in that super, nor had there been. The combs were built in the super from foundation, and were perfectly white, except for those queen-cells. Did the queen squeeze through the excluder just to lay 2 eggs, and then return to the brood-nest?

Careless Bee-Keepers.

I think fully 75 percent of the bees of this locality are dead, and the most of them went under this spring. I pity the bees, but have mighty little sympathy for the bee-keepers (?) who allow their bees to die from neglect. I tell you, Mr. Byer, we can work to get laws to suppress foul brood, but when we get laws to deal with careless, heartless bee-keepers, and weed them out of the business, foul brood inspectors will be a thing of the past. However, a poor season followed by a hard winter probably does the "weeding" far better than any law.

I hope you will have a prosperous season, and that the present prospects are not telling the truth for the bee-keepers of Ontario in general.

H. A. Smith.

Palermo, Ont., May 27.

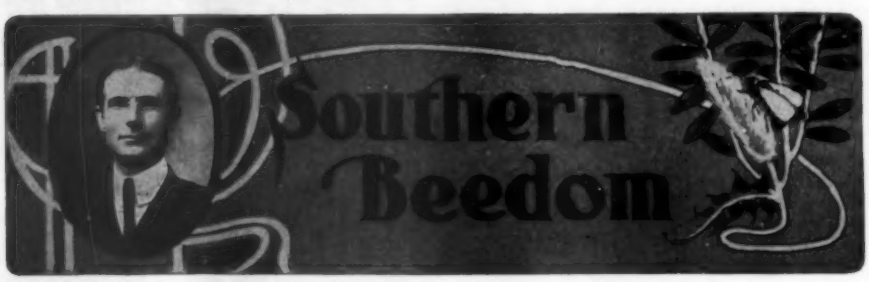
Yes, the season is certainly a record-breaker. As I write (June 1st), we have a fire going in the house as though it were March instead of June. Apple-blossoms are not open yet, and clover is correspondingly late. Yet, for all the bad weather, bees that wintered well have more than held their own. The majority of my colonies are as strong as usual at this time of the year. In fact, I hardly know what to do with them in order to keep back swarming.

The weather has been so steady cold that we have had only a few days fit to open hives. I hesitated to unpack the hives, and now find about one-fourth of the colonies have queen-cells started.

The case you mention would seem to prove beyond a doubt that bees do move eggs and larvæ. Personally, I have been convinced for some time that such a feat was quite possible.

As to pollen injuring the bees, after thoroughly examining the combs of honey left in hives where our bees died from dysentery last winter, I feel pretty sure that too much pollen was the cause of the loss, and that the small quantity of honey-dew present in the hives was only a minor factor in the business. All during the clover flow last season the majority of the bees coming in would have pollen, and although the most of this pollen was sealed over, yet with an exceptionally steady winter, and the absence of a suitable day for a cleansing flight, the excess of pollen brought on dysentery early in February. Most of the colonies that perished left from 20 to 30 pounds of stores in the hives, and when a portion of the comb is uncapped the majority of the cells have pollen in the bottom.

Please Mention Bee Journal when writing advertisers.



Conducted by Louis H. Scholl, New Braunsfels, Tex.

Cheap, Suitable Bee-Veils

There are many kinds of veils, and one is apt to find this out if he travels and visits among bee-keepers. But there are good veils and bad ones. A crude veil, much used, is that made of wire-screen cloth, generally fastened to the edge of the rim of an old hat. To the lower edge of the wire-cloth is sewed a width of cloth which falls over the shoulders and is fastened so the bees can not get in. For me, such a head-gear has its faults. First, it is rather bulky or heavy; it is warmer than some of the other veils, and the screen-wire hurts the eyesight to a great extent. It is also quite cumbersome to take along from place to place.

I should prefer something that can be folded up and carried in the pocket, like the silk and cotton tulle veils generally listed in the catalogs. These I have used for years, after trying many kinds. There is an objection to the material these veils are made of, however. The all-silk veil is rather more expensive, and soon wears out. Those made of cotton tulle obstruct the vision too much on account of the heavier material. To remedy this, cotton tulle veils are made with a silk face, a

American Bee Journal

square piece of silk tulle being sewed in the veil so it will come in front of the wearer's face when worn. This is the kind I have used most, but the silk facing is not desirable enough, and soon wears out, like that of the all-silk veils.

Needing a number of new veils this season, I looked around for some material that would be better suited for the purpose than the cotton tulle especially made for bee-veils—something that would not interfere with the vision as much—and it had to be stronger than the silk veiling.

The only thing "on the market" was different grades of bobbinet, commonly used for "mosquito-bars," but this material was "all white." The prices ranged from 20 cents to 30 cents per yard, the material being over 2 yards wide. The 20-cent material gave me enough for 3 large veils for 30 cents, or 1½ yards. This made the veils long enough to come well down over the shoulders, which most of the finished veils do not do.

Five cents worth of black diamond dye made this white material as nice for bee-veils as could be desired. After coming out of the dye the piece of bobbinet, still uncut, is stretched to dry. This leaves the meshes large and open, and the threads of the material well stretched, making the finished veil much more open to the eyesight and cooler than the regular black cotton tulle, more durable, and very much less expensive than the silk veils.

A plain white cord is sewed in large stitches in the end that comes over the hat, and serves as a draw-string, tied in a bow-knot to adjust to different sizes. A rubber-cord or elastic may be used, but it wears out. Nothing is done with the lower edge, which falls over the shoulders and is pinned down to the front of the shirt with a large safety-pin. My aim is to make these veils "good enough," and as cheap as possible, and I think I have accomplished this, as 35 cents worth of material and a little sewing for 3 veils—a dozen cost just $1.40, and a little more sewing.

Shallow Hives

The plain, sensible way in which Mr. Scholl has recently discussed the shallow hive, its advantages, etc., makes one almost wish he had his bees *all* in shallow hives. But the very thought of having so many of these little shallow hives and frames to put up and handle for extracted honey, to be the equal of say one 3-story Langstroth hive—well, what would we have to do to rig up an apiary of say 100 hives of this class? Oh, I don't know; it fairly staggers me to think of it, Mr. Scholl.

With no desire to get up a hive discussion with any one, I would say to the average beginner to go slow on changing from the Langstroth hives to the shallow hives. They are all right perhaps for the expert bee-keeper, but for the novice I would say, try only a few, and then they will be used only as supers on the standard hives with 9 out of 10 in less than 5 years.

It has been said by some writers that they never knew any one that gave the shallow hive a thorough trial that ever went back to the Langstroth hive. Let me say to that writer, that I do not know what *all* the bee-keepers have done, but I do know of a number that have given up the shallow hive in disgust, and W. Z. Hutchinson is one of them. I could give the name of others if it were necessary. L. B. Smith.

Rescue, Tex.

The "Old Reliable" as seen through New and Unreliable Glasses, By E. E. Hasty, Sta. B. Rural, Toledo, Ohio.

That French Record of Swarms.

Like the proverbial dog barking at a squirrel-hole, I incline to return to that French record of swarms. It is of use to us to fix the degree of temperature below which we need expect only occasional swarms. They fix it at 68 degrees. Only 11 percent swarmed when it was cooler than that. Their bees are more accustomed to temperature below 68 degrees than ours are; so we are not likely to have more than 11 percent below that figure. I have no records of temperature with which to compare.

They never could catch a swarm coming out when it rained. Same here. In my total experience of some 3000 swarms, I have had just one that got on the wing *just before* a misty, fine rain began, in which water fell quite fast. It was interesting to see that they paid no attention to the rain—or next to none—took their own time to cluster.

Another thing is the same here: Wind has a very repressive influence, although not entirely prohibitory like rain and cold. Their finding is that only 18 percent swarm when it is windy. Don't believe the figure would be quite as high as 18 at my yard; but of that I'm not sure. Manifestly the figures of this point don't depend wholly upon the bees, nor yet on the continent and nation. At a yard so blest as to have no winds in swarming-time, the percentage would necessarily be 0. And the yard with stiff breezes every day would have a percentage of 100.

I do not agree with Mr. Getaz that they vitiated their barometer observations by not observing the other points of the weather in the same connection. Something still left. Useful to us to be able to say in the morning: "Barometer high; this will be a swarmy day—other things being equal; or, "Barometer low; this is likely to be a non-swarmy day, as compared with other similar days." Page 391.

Some Things that Influence Swarming.

Sunshine, cloud and shade are three words to conjure with, and so they proceed to conjure with them. Just to say things off-hand without records, I should say sunshine is decidedly promotive of swarming, and cloud somewhat repressive, *but only slightly so if the temperature is high.* As to the shade of trees, I think the total number of swarms is decreased but little by it—such shade merely making the swarms a little later in the month and a little later in the day. Still a possibility that I'm wrong in that, however.

Very likely, as Mr. Getaz suggests, young queens in France would show a less swarmy record were it not that their hives are generally very small. But still, I shouldn't wonder if our folks have been overrating quite a bit the repressive influence of a young queen. Some *almost* want to say that colonies with a young queen never swarm. Here's a good point for our boys experimentally inclined to strike in at—and find out just how it is at our house.

I should call the dictum of Mr. Thibault, that no colony swarms when there are no drones—I should call that a pretty good-sized mistake. Successfully exterminate, and keep exterminated, all the drones of a colony and it would be more likely to swarm than if left alone—if you let me judge. That the colony that doesn't try to rear drones will not swarm—I guess that's probably so. Also another thing may be so: If a colony's own drones are all exterminated, some may come in from other quarters. Of 10 such colonies suppose you find 5 with quite a sprinkle of immigrant drones and 5 with none. The 5 that immigrant drones find it pleasant to stay in are the ones that are intending to swarm, I guess. Or is this getting too far into the domains of the fanciful?

They found that 30 percent refrained from swarming from hives with about the capacity of a cubic foot, and 70 percent from hives with a capacity of 2 cubic feet. Just about what we would expect over this side—but swarmy locations worse, and some locations better. Page 391.

Breeding Non-Swarming Bees.

That some colonies swarm themselves into tribes in the course of the years, and some other colonies disappear, progeny and all—that's one of the least thrashed out. Perfectly cor-

[Continued on page 553]

American Bee Journal

Nucleus Method of Increase

BY G. M. DOOLITTLE

A correspondent wishes me to give him a plan in the American Bee Journal whereby he can increase his 4 or 5 colonies to as many as possible for wintering the coming fall. Well, here is the way I have done something of the kind in bygone years, when I was anxious to increase a few colonies to as many as could well be done:

I first get out boxes of suitable sizes, according to the size of the colonies I wish to make, holding from one pound of bees up to 6 or 8, the latter being a very large swarm. For ordinary nuclei nothing is better than a 20-section shipping-case nailed up, and leaving off the side strips that hold the glass. On one side of it, where the glass would go, I permanently nail on a piece of wire-cloth, and for the other side nail a piece of wire-cloth the same size as the first, to 4 strips of suitable length, so these strips surround the wire-cloth as a slate-frame does a slate.

Now, with 4 small wire nails (one in the middle of each strip) I tack this wire-cloth frame to the opposite side of the box, when I have what I term a "nucleus-box," one side of which can be removed at any time with the blade of my jack-knife. I next had a tinsmith make me a very large funnel, 18 inches across the top, with the usual slope of side, coming down to a 2½-inch upright, or outlet, which was about 2½ inches long. Having the funnel made I pressed the top together from opposite directions till I had it oval at the top about one foot wide and 22 inches long, in the diameter of the two ways across the top. It was fixed thus so as to collect in the bees better, when they were shaken from the frame, than would be done if left in the ordinary shape.

I then bored a hole in the top of the nucleus-box, which would just let the small or upright end of the funnel into it, and over this hole I fixed a slide to cover it when the bees were in and the funnel out. In one end of the box is fastened a section of honey, of those that were not quite salable and left over from the year before, the same being held in place by a screw going through the end of the case and screwing into the section. This is for feed for the bees should they be kept in the box longer than the honey they take with them lasts, as is quite often the case. This completes the box and funnel part.

I now boomed ahead as fast as possible the colonies I wished to increase, by using any of the plans given in the books for keeping them warm, stimulating, etc., and as soon as one became strong enough I prepared it for queen-rearing, as I have given in the bee-papers and in "Scientific Queen-Rearing," continuing to rear queens from this colony as was required; for queens can be so reared and not hinder the colony from contributing its share of bees for increase as well as the others, as the queen is laying all the time in it. This gets us along much faster than where a colony is to be made queenless to provide queens, as is advised by most of the other plans of rapid increase. With this plan no colony is made queenless at all, but all queens are kept laying at their best all the time.

As soon as any of the colonies are full of bees so they can spare bees from 2 frames, or from half a pound to a pound, and there are ripe queen-cells, take the cells out and put them in the queen-nursery to hatch. As soon as the queens are one or two days old, go to the hives which can spare bees, take from each 2 frames, being sure the queen is not on either of them, and shake the bees from them down through the funnel into the box, doing this at about 10 a.m. Having the bees in the boxes, set them in the cellar or in some shady place where outside bees can not get at the bees which are confined, leaving them till about 5 p.m.

Now get a virgin queen for each box, putting each in a cage having a stopper in it filled with queen-candy, so that it will take the bees about half a day to eat out the candy and liberate her. Take these queens to the boxes of bees, picking each up in turn and suddenly setting it down, when all of the bees will fall to the bottom, when the funnel-hole is quickly opened, the caged queen put down through it, and the cage secured by means of a bent wire clamped between the slide covering the hole and the top to the box. Then close the hole, the cage hanging about one inch below the under side of the top to the box, so the bees can cluster all about it while they are hanging in a cluster, as they soon will be.

After the queens are all in the boxes in this way, they are to be set away where they can remain undisturbed till near sundown of the next day but one, or allowing the queen and bees to remain a little more than 2 days in the box, when the bees are found all contented with their new queen, and hanging to the top of the box like a swarm.

I now go to the hives that can spare it and take as many frames having a small amount of brood in them as I have boxes of bees, shaking all the bees off from each and replacing with a frame of empty comb. Put one of these frames in a hive where you wish your new colony to stand, together with a frame of honey, or enough in it to secure the bees from starvation, and another frame of empty comb, placing the one having brood in it in the center. Having each hive thus fixed, the bees from one of the boxes are to be put in each. To do this, lower the box down into the hive near the outside comb, and with a knife pry the wire-cloth frame off enough so the bees can run out freely on the combs, when the hives are to be closed and the entrance adjusted to suit the size of the little colonies.

When the full colonies are strong enough to take more bees from them, get the boxes, now free from bees, fixing them and proceeding as before. As the season advances one little colony can be formed from each decent colony twice a week, the colony furnishing the queen-cells being equal to any of them in this regard. If you do not have the combs, frames filled with comb foundation will have to be used; but in this case your progress must necessarily be considerably slower.

When the honey harvest arrives, keep plenty of combs on the strongest colonies, so that plenty of honey can be stored in these for winter, and as the season advances use more bees each time in making the colonies; and when fall arrives, if you do not have all the colonies you desire, and you have plenty of combs of sealed honey for stores which you can use, take bees from several hives, thus forming a strong colony at once, and hive them on these frames of sealed stores. I have so formed colonies in September many times, and had them prove the best of any the next season.

With plenty of combs at one's command, 10 colonies in the spring can easily be increased to 100 in the fall by this plan without feeding, or any outlay in cash for queens or feed or anything of the kind, and if the season is really a good one some surplus can be secured besides. But the success of the plan lies very largely in not commencing operations until the colonies are strong, nearly enough so as to swarm, and then not robbing them of bees till they are too weak to work to the best advantage, using few bees for each little colony in June, and more and more as you go along, thus having all come up to full colonies in August and September.

Half a dozen nucleus-boxes and a funnel have become a part of my outfit in bee-keeping, and I use them much more often than any one would think, for with them I can handle bees almost as well as could be done with potatoes; and they will stay where put, when this plan is used, almost as well as would the potatoes. With almost all the other plans of making colonies or nuclei, the great trouble is, that so many bees return to the parent colony that the nuclei or small colonies are so weak as to be of little value, even if the return is not so great that they are absolutely worthless.

Borodino, N. Y.

Please mention Bee Journal when writing advertisers.

American Bee Journal

Spring Feeding of Bees

BY EDWIN BEVINS

I have read with considerable interest the articles by Mr. Scholl and Mr. Dadant, relating to the spring feeding of bees and the best kind of feeders to use at that season of the year. Mr. Scholl's arrangement has advantages over the other feeders mentioned by him, but my objection to it is that, like the others, it takes the bees too far from the brood-nest. This may not be true to any great extent of the division-board feeder, but I object to its use for the same reasons as given by Mr. Scholl. I want a feeder which can be placed right over the cluster of bees, which, in spring, is right on the brood; I want no space but a bee-space between the tops of the frames and the bottom of the feeder; and I do not want any bees to be made to crawl up the outsides of any feeder in order to get feed from its open top.

There is no feeder so satisfactory to me as a modified Hill feeder. The make-shifts for the Hill feeder, mentioned by Mr. Dadant, will not do at all for the man who has many colonies to feed, as they take up so much time in preparation for use. The quart Hill feeder is the one I have been using, but I object to it on account of its depth, which prevents packing around and over it sufficiently close to prevent escape of heat from the brood-chamber.

A feeder, with recessed and perforated cover, half the depth and with greater diameter than the Hill feeder, is all right. Where to get the ready-made shallow atmospheric feeder does not yet appear. Not every tinner has the machinery to form the cover out of a solid piece of tin. Any tinner could cut the regular sizes of the Hill feeders down one-half too small in capacity. I want a feeder to hold not less than one quart, and incidentally I will say that I use no Hill feeder without enlarging a few of the perforations with the point of a wire-nail. This, perhaps, is not necessary where feeders are new, but with long use it will be found an advantage. Probably in order to get the required form of the Hill feeder, I shall have to get my supply dealer to order some from the factory where the Hill feeders are made.

The use of the Hill feeder in its present form has enabled me to feed 100 colonies of bees since the middle of March more satisfactorily, I believe, than I could have done it with any other feeder, but a shallower Hill feeder would have saved me some work, and, I think, have been better for the bees, because I could have made the packing a little tighter above them in many instances.

Mr. Dadant's caution about using rusty feeders may be all right for those who feed when the weather is so cold that the bees will not take down the feed without leaving them on for several days. I have fed in rusty feeders many times in the fall, and have never had a case of dysentery amongst my bees. If the feed is given warm, and the quilt and cushion are tucked down closely around and over the feeder, the feed is always taken within a few hours after giving, if the perforations are all clear. Sometimes a large number of them get clogged, and hence the use of the hammer and wire-nail.

I will add here what may be a benefit to some. I put supers of varying depths on all of my hives in October. These supers are sometimes the ones used for 4¼ sections, sometimes half-depth extracting supers, and sometimes full-depth hive-bodies.

I will also add, though not pertinent to the subject, that I place 2 corn-cobs about an inch apart across the top-bars of every hive. Over these, and covering the whole surface of the frames inside of the super, is placed a piece of heavy burlap, and above this is placed a gunny-sack, or any sack made of cheap material, partly filled with chaff from the straw-pile after the thrashing is done.

When I wish to give feed in an atmospheric feeder, all I have to do is to raise the back end of the cushion and the piece of burlap below with one hand, and shove in the feeder with the other. It is done so quickly that the bees do not realize what is going on until all is over.

In the deep supers the feeders can be covered very well to prevent the escape of heat, but not so satisfactorily in the comb-honey supers; hence I devised a shallower feeder that can be packed around and above easily in any super, and does not call for very much movement among the bees in order to obtain the feed.

At this writing (June 6) the winter packing around my hives has not been removed, and will not be until weather conditions are less provocative of swear words. These conditions have prevailed here most of the time since April 1st. The supers with chaff cushions will be left on every hive as long as feeding is necessary. With frequent rains and warmer weather I think there will be some kind of a flow from white clover in the not distant future. In the meantime there will have to be quite a liberal "flow" of granulated sugar and water, half and half. My colonies now are not in very bad condition to take care of a honey-flow.

Leon, Iowa.

The Bee's Antennae—Pollen Color

BY PROF. A. J. COOK

Mr. B., of Delaware, Ohio, asks me to explain in the American Bee Journal how the bee finds the nectar in the flowers, or how it is guided in its search for what it desires. Of course, the bee has eyes, and very remarkable ones. All insects have the large compound eyes, which are made up of thousands of simple eyes in many cases. Each of these simple eyes is quite complex, being made up of several parts, much as we find them in our own eyes. They often have three simple eyes—or ocelli, as they are called—which are well marked in all bees. Thus we would expect that bees would see well, and would use these eyes in their quest for nectar, pollen, and whatever they seek as they leave their hives. We have reason to believe, however, that bees are not so much guided by vision as we should expect. We know when we move the hives slightly how the bees will come down to the old place for days. They seem to be guided by sense of direction, or habit, and not by direct vision.

I have another case that seems to show that their vision, rather than sense of direction, guides in some cases, but that it is often at fault. I once lived in a house exactly like my neighbor's, though the trees surrounding each were quite different. When I would put honey on my back porch for the bees my neighbor was annoyed by swarms of bees on his similar and similarly placed back porch. The bees were obviously fooled, and returned to the wrong house. Our company, and that of our neighbor, often made the same mistake.

I have no doubt but bees see well, and use their eyes to their great advantage, yet in the hive where they do much work they can not be thus guided, as the interior of the hive is totally dark. I much doubt, however, if bees do use the sense much in the quest for nectar of flowers or other sweets.

Many insects like bees, ants, wasps, moths, etc., have very delicately sensitive organs of smell. The scent organs are the antennæ. Wherever we find the antennæ—the horn-like organs appended to the head—well developed, we may be sure that the sense of smell is pronounced. Male moths, drone and worker bees, many beetles and ants, have such antennæ. In all such cases we may be sure that the insects have need in their functional activities to detect odors, that it may be, in some cases, are entirely unperceived by us. We have one large silk-moth here, that when a female comes forth from her cocoon, though the room may be closed all but a slight lift of one window, males often enter to the number of 50 or 100. I have known of just such curious entrances to rooms twice in my life. I have known of one case where a swarm of the male moths were flying outside about the closed windows of a room, when, upon examination, it was found that a female had emerged from the cocoon inside. It is authentically reported that in one case males of these moths came down a chimney through a stove, and into the room from a stove-damper, when a female had just come forth from its cocoon in the room. If we approach close to these moths we smell the peculiar odor, but we must get close. Think how wonderfully sensitive the nose (?) of the male moths must be to detect this outside the room with all the windows closed!

Here in California we often note a butterfly—Pyrameis cardui, or the thistle butterfly—going by countless thousands in one direction. This migration often lasts for hours, or even for days. In some cases we find that they are going against the wind. The explanation is not far to seek. There are, without doubt, a thicket of thistles, their food-plant, in some distant neighborhood. The faint odor of the plants, which we do not detect at all, is perceived by the butterflies, and they are impelled by a marvelous instinct to seek the plants on which to lay their

American Bee Journal

eggs, and so their young—the prospective caterpillars—which they will never see, may have a comfortable larder.

The queen-bee flies out to mate. It is well that she be not away long. The drones have a marvelous development of the olfactory sense, and so are able to find the queen very quickly. We all know how quickly the queen mates, and how short the time after she goes forth when she returns bearing the signs of having met the drone. In the case of bees, the drone has much the best antennal development of all the bees, though the workers are not poor in this peculiarity.

Now I think we know how the bees find the nectar. The nectar has a very attractive perfume. We have smelt it here about the splendid orange orchards which have made all outdoors deliciously fragrant the past few weeks. The worker-bees perceive this odor, and so hie themselves to the fields that they may gather the tiny nectar-drop which they transform to honey.

Our answer then to B. is, that bees are guided to the harvest by odor mainly, and find some aid doubtless by sight. It is probable that sense of direction is no small aid to them in returning to their homes after procuring their load of nectar.

A word as to the structure of this smelling apparatus! It consists of very numerous microscopic pits, each with a peg at its bottom. Both pit and peg are surfaced with a delicate membrane. The more sensitive the sense of smell the more of these pits and pegs. Of course, it is necessary that the antennæ should be kept clean. Bees will, of necessity, get the antennæ dusted with pollen. Ants and wasps will get the dust of the earth on their organs of smell. The antennæ-cleaners on the front legs of all hymenopterous insects are admirably adapted for this purpose. I know of nothing neater or more admirable in the whole round of animal anatomy than these antennæ-cleaners. At some future time I will explain how they work.

Color of Pollen.

While most pollen is yellow, yet it is interesting to note the variety of colors that we see by watching the bees. We see yellow, orange, brown, black, white, red, green, and even blue.

Claremont, Calif., May 10.

The Pearl Agnes Bee-Hive

BY PROF. EDWARD F. BIGELOW.

The Pearl Agnes hive was designed by me in 1905 and placed on the market.

The body of the hive has five frames with a total comb capacity of five-sixths of two full-sized Hoffman frames—that is, each is exactly one-third that of a full frame (16⅞×8 inches interior). The frame itself has somewhat the appearance of a large section 5⅝×8 inches. It is supplied with full comb foundation, or with a starter across the end as may be desired. The length (8 inches) of these small sections is the same as the depth of the interior of a Hoffman frame, and the depth (5⅝ inches) is one-third the length of the Hoffman, so that three may be fitted into the length of a Hoffman, if placed side by side and on end.

The super is fitted with sections 2½ inches deep by 2 inches wide—that is, one-fourth the size of the Danzenbaker 4×5 section, and hence it may be used, if desired, in the regular Danzenbaker super as "toy" or "sample" sections (Fig. 2). These little sections, when filled either in the Pearl Agnes hive or the regular full-sized super, are convenient, dainty, attractive, and, to the young folks, "just too cunning for anything." They may be used as sale samples, or novelties for the table, or as gifts to friends and to visitors at the apiary. The fences of the super are in the same form, but of smaller size than the regular fences. The cover is shaped like a gable and roof, so that, together with the fanciful painting of the three parts in three different colors, the whole has the appearance of a doll's playhouse (Fig. 1). This effect is further enhanced by the feeding-bottle (with perforated cap) which extends down through the roof, and is of the proper

length to project far enough to have aspect of a chimney (Fig. 1). The inventor is in such hearty sympathy with Old Saint Nicholas, and a magazine of that name so full of good things for the young folks, that it seems eminently fitting that the honey-bees should get their presents of sweetness—a la Saint Nick—down the chimney!

The house-like appearance is further increased by a neat label on the gable end, in the place usually occupied by the attic window.

The door is a swinging wire screen, so that the entrance may be easily closed when the hive is to be carried from place to place for observation or experiment, and when the professional bee-keeper desires to take it to an outdoor apiary as an enlarged nucleus for breeding purposes.

In the invention of this hive I have had in mind several purposes.

1. To supply the educator with an inexpensive, attractive miniature hive, all complete with comb and colony by the manufacturers or by a large apiary. For demonstration in the yard it prevents the disturbance of a full-sized working colony. For the schoolroom it can be easily carried, taken apart, and put together, and yet it shows in miniature everything that could be shown by a large hive, which it would be difficult or impossible to take into the schoolroom.

2. For the young folks a hive that will give them a start in the fascinating work of bee-keeping and observation, at a minimum of cost. To the large apiarist it is what the flower-bed or school garden is to general horticulture or to agriculture. It is a sample. It shows the thing and gives the simple scale. In floriculture or in vegetable gardening the child enjoys the small bed more than he would do if obliged to cultivate an acre, or even a market wagon full of lettuce or radishes or popcorn. But before the coming of the Pearl Agnes hive there was nothing for the interested boy in which to keep a colony, except the regular hive used by the large apiary, which often contains a thousand colonies. This hive is, then, for the young folks a play apiary, as well as a means of nature study.

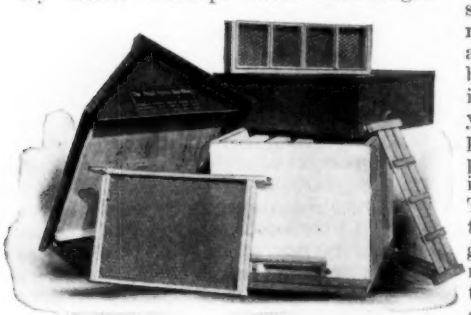
3. For the commercial apiarist this Pearl Agnes hive is better in some respects than the usual "baby nucleus" for mating, because "the nucleus" is too small for that purpose, except with close and continued attention. It is a hive to be kept especially for exhibition to visiting friends. This is better and easier than to disturb one of the regular colonies by taking it out. It may also become a source of income if it be purchased empty from the manufacturers, and filled with a complete colony and supplied to nearby teachers. As previously explained, the supplying of the hive thus filled would be equivalent, in number of bees and quantity of comb, to five-sixths of a two-frame nucleus. Simply put six of these section frames into two full frames, and fill the Pearl Agnes hive with five of these frames. But, better than all this, perhaps, to the professional apiarist, it solves the problem of plenty of queens in early spring, when queens are not only the most valuable but the rarest. Queens are most easily obtained in the latter part of summer or in early autumn. They are most needed in the spring. A ten-frame hive fitted with thirty of these large sections may be divided into six Pearl Agnes hives, and thus five extra queens for that one hive carried through the winter. In early spring all the thirty frames may be put back into the ten-frame hive, and there will then be five extra queens to be used when queens are queens.

The first Pearl Agnes hive was roughly made up in 1905 from my drawings and specifications, and was placed in the hands of my esteemed friend and honored fellow-townsman Mr. L. C. Root, who is well known as the author of "Practical Bee-Keeping," and an apiarist with an experience of almost half a century conducting apiaries of the largest size, and he is still an enthusiast with many colonies. He reports at the present writing (last week in March 1906) the bees have wintered astonishingly well (indoors) in this Pearl Agnes hive. I am indebted to him for the suggestion in regard to the pos-

American Bee Journal

session of plenty of queens in early spring.

4. To the experimental apiarist, the advantages of the hive are so many and so important that I prefer to defer even suggestion in reference to them till later, when I may be able to announce and to illustrate some of the things that have been done, rather than predict what possibly may be accomplished. I will merely advise the reader to procure one or more of these hives; and my assurance is that, if he will handle them, study them, and dream about them as much as has the inventor, some of the suggestions will come to him spontaneously, and thus give him all the charm and pleasure of orignal discovery. The results of such discoveries may add much of value to the apiarist as well as to the scientist. It would be, you know, difficult to play a game of chess through all its entrancing situations if the men were of full size. One can often imagine and theorize better in miniature, better with a plan than with the completed house, better with a map than with the country itself. Perhaps these advantages



will be yours if you become an experimental apiarist with the Pearl Agnes hive.

It is not for me within the province of this article to tell you what I think the manufacturers intend to do with this hive. But I will give you a small hint as to what I suspected was in the mind of one of the managers when he said a certain thing. From this I infer (and I "guess" that the inference is well founded) that they no more expect to make a profit directly from this hive than the fisherman expects to eat the chubby little "shiner" that he puts on his hook when he goes angling for pickerel. These shrewd manufacturers know that bee-keeping is fascinating, and that all they have to do is to get you started. Everything else follows easily. So this hive will be put on the market at less than net cost, and in this laudable action the manufacturers will not be hampered by any patent to be taken out by the inventor. He has too strongly at heart the interests of apiculture as an educational factor.

But, to revert to the figure of the fisherman and his bait. The parallel is not quite true, and so far as it is inaccurate it is to your advantage. This "bait" (the Pearl Agnes hive) in itself is good, and the more freely it is offered (by the manufacturers) the more reason for your pulling it off the "hook" and taking it home with you —in fact, get several of the "baits."

The name "Pearl Agnes" is in honor of the 10-year-old sweetness-maker of the "B(igelow)-hive" in which I am writing.

Where Do the Flowers Get Their Color?

BY GASTON BONNIER.

Why are the flowers adorned with rich colors? The poets have found many answers to this query, which today is raised anew with violent controversies among the learned. There is a theory, first expounded by a bizarré personage under the name of Christian Conrad Sprengel in 1793, which has been everywhere believed. This theory postulates a perpetual strife on the part of the flowers for brilliance in order to win recognition at a distance from the honeyed insects. It is to attract these that the corolla is decorated with bright hues.

I occupied myself with this question for a long time when I was doing some work for my thesis for the doctorate of sciences. I was taught the absolute reciprocal relations between the insects and the flowers, the attraction of the bees by the colors. I was convinced in advance, with the enthusiasm of youth, that my observations and experiments served to confirm all the points of these propositions in bringing fresh proofs to bear upon them. The excellent Decaisne, a little skeptical on this point, encouraged me to go on in my work. At the end of some months I was desolate. All my observations and all my experiments contradicted the theory of reciprocal adaptation, and in particular the role attributed to the color of the flowers in the attraction of the bees.

After a continuation of my observations I prepared a list of plants whose flowers are scarcely visible, obscure, uncolored, or green like the leaves of the plant itself, but which all are most nectariferous and abundantly visited by bees and other insects. To this list I added that of all the trees on whose leaves the bees sought their honey stuff —leaves not colored otherwise than neighboring leaves without the honey —and all the plants where insects come for nectar, besides flowers, the various parts of a vegetable, not colored, not visible, and wherein are situated the nectars termed extra-floral.

I prepared another long list, including the names of plants with highly colored flowers, but wherein there was no secretion of sugared liquid, where, in consequence, the insects did not come.

As for experiments, I made many and varied, all of which bespoke the same truth, that there exists no correlation between the presence of a lively color and the quest of a sugary liquid by the bees. I will cite but one. I disposed squares of many colors on a uniform green foundation of grass. The same quantity of syrup or honey was placed in the middle of each square. The bees discovered these various depots of sweet liquid in the same time without the color influencing their search. The red square on a green foundation attracted them no more than the plain green square where the same amount of syrup was to be had.

The result of all my experiments was the following:

The development of colors in floral organs and that of nectar are not concordant.

Under the same conditions the most highly colored flowers are not the most visited by insects.

The visibility of flowers is not proportioned to their adaptation to cross pollination.

The insects go in the largest numbers where the nectar is the most abundant, the richest in sugars, and the easiest to take.

The researches made by M. Felix Plateau, professor of the University of Gand, are important, his observations most numerous, his experiments varied.

First he verified with many details one of the points which I proved, that bees show no preference or antipathy for the diverse colors which the flowers of the different varieties of the same species can present.

But this Belgian scientist did not content himself with verifications. He made artificial flowers, excellent imitations, of paper or cloth, and the bees did not visit them. He constructed others of living leaves with the natural vegetable odor. If he put honey in them the bees visited these false green flowers; if the honey was withdrawn they ceased their visits.

When the nectariferous part of the natural flowers was removed, leaving the brightly hued corolla, the insects came no more on their quests. If, on the contrary, the nectariferous flowers were hidden beneath green foliage the insects knew how to trace their invisible prize.

Finally, M. Plateau placed a glass in front of a nectariferous flower. If it were the sight alone which guided the insects they would go as soon to the perfect image of the blossoms reflected in the mirror as to the blossoms themselves. But the insects were undeceived. Instead of striking against the glass as they entered the room they turned directly to the flowers as if the mirror did not exist.

The general conclusion of M. Plateau's researches is identical with that which I formulated twenty-five years ago; the insects are guided to the flowers by another sense than vision and which only can be smell.

This does not say that it is the perfumes of the flowers which attract the bees, because perfumed and nectariferous flowers seem in general to be without sensible result.

It is not the fragrance such as we conceive subjectively, it is a special, subtle odor which permits the sugared matter to be recognized.

Indeed, substances which we cannot recognize by their odor are found by the bees. I have often made the following experiment—for example: Bits of ordinary sugar, which have no appreciable odor at a distance, are placed in a dark pavilion, closed, where there is no honey or objects having a special

American Bee Journal

fragrance, and where the bees do not come. On the morrow, sometimes the day after, the bees have discovered the sugar and have recognized it as a useful material. Nibbling at the morsels with their feeble little mandibles, they realize that this process is not practical for gathering the sugar. They go for water to dissolve the sugar and then pump out the sugared water.

The preceding suffices, I think, to raise doubts as to whether we owe the colors of flowers to the bees, as Sir John Lubbock said.

Then why are flowers colored? Why not inquire to what mysterious adaptation we owe the color of the rocks, of precious stones, or of sunbeams? This, evidently, is neither a reply nor an objection. But the partisans of the Sprengel theory have this to answer: Why are mushrooms rich of hue? Many who are convinced of the floral adaptation to insects say that the edible mushrooms are colored like the poisonous varieties so as to prevent being gathered. As well might we say that the poisonous varieties assume the colors of the edible kinds so that they may be sought!—Times-Democrat.

Report of the Chicago-Northwestern Bee-Keepers' Association, held in Chicago, Wednesday and Thursday, Dec. 5 and 6, 1906

(Continued from page 521)

INTRODUCING QUEENS.

"How do you introduce queens?"

Mr. Taylor—I seldom introduce a queen except in the spring. If I want to change a queen, or the colony is queenless, I open the hive and observe the conduct of the bees, and you can tell, if they have a peculiar way of acting, running together, perhaps running towards your hand a little, with their wings lifted and a slight shaking motion, you can turn your queen right in. They are all right. Sometimes, if I am in doubt, I will put a queen-excluder on the top, let a few bees come up, let the queen loose and decide then. I hardly ever cage a queen in the spring, because the bees are so anxious to get to work that they will almost invariably accept the queen; in fact, I do not know that I remember when a colony that was queenless refused to take a queen early in the spring.

Mr. Abbott—Suppose you had a black queen and you wanted to give them an Italian.

Mr. Taylor—Take her out and wait a day or two to let them find out they had lost a queen. They are terribly anxious to get a queen in the spring, and that running together a little and a slight shaking of the wings shows that they are looking for one.

Mr. Abbott—I supposed that among all the progressive bee-keepers the one most in advance and at the forefront was R. L. Taylor, of Michigan.

Mr. Taylor—No; I am a fogy, sir.

Mr. Abbott—But I see he says that the hive should be left for a day or two for the bees to find out that they are queenless. Now in the name of common-sense, I want to ask ***why?*** I asked that question, and I asked it that I might bring out just that one idea. *Why* make a colony know it is queenless? There is something to this. You are wasting a great deal of time when you wait 2 days for the colony to find out that they are queenless. Now if Mr. Taylor will tell *why,* perhaps I will say something more.

Mr. Taylor—Two days early in the spring do not count very much, and you do not have to wait to see whether they are ready to receive her or not. It is the easiest way. Of course, I remember at one time that I was handling some bees, when I used to fool with them, and had a lot of them shaken on the ground, and in stumbling around with my big feet I must have hurt the queen. I noticed before I got through the colony that the bees were in a turmoil. They were running up on the front of the hive, and on the side, and looking around as lively as possible. I concluded something had happened to the queen. I looked on the ground and found I had stepped on her. I got another queen and they were perfectly satisfied with the other queen.

Mr. Abbott—I have been trying for 20 years to get into current bee-literature and bee-books this one statement, that it is not necessary for any colony to be made queenless in order to introduce a queen safely a day, or an hour, or a minute, except what time is necessary between pinching the queen's head off and turning the other queen out, or putting her in a condition to get out. After 20 years' trial I do not think that that statement is in a bee-book, or in any bee-literature that has not come directly from my mouth in reporting something that I have said in a convention about it.

Dr. Miller—Allow me to speak and say right here that Mr. Abbott perhaps never reads anything I write, or he would not say that sort of thing.

Mr. Abbott—I beg your pardon, then. It is not in any book.

Dr. Miller—It is in the American Bee Journal.

Mr. Abbott—I have said it in the American Bee Journal several times, commenced about 25 years ago, and I have been saying it ever since. I want to say again, for the benefit of those who have not heard me say the same thing, that I never make a colony queenless. I do not rear queens any more, but on every cage I find directions, and those directions I invariably tear off because they say to make the colony queenless 48 hours, and then introduce the queen.

Dr. Bohrer—Do you simply remove the queen, destroy her, and turn the other one loose?

Mr. Abbott—No, sir. When I have a queen or a half a dozen queens that I want to keep, I put them on top of the frames of a colony and leave them there 2 or 3 days. If I want to introduce one of those queens I hunt out the old queen, pinch her head off and turn one of the others free. If I wanted the old queen free in the hive day after to-morrow, having introduced one to-day, I would take that old queen out, put her into a cage and turn another one free, and in a very little while the queen in the cage is out on the combs laying, and the bees never know they have been queenless. They have no feeling of resentment towards those queens in the cage any more than they have to the one free on the combs. They are just as friendly with any one of the 5 queens on top of the frames as the one in the hive laying eggs, and they take one just as well as another. What is the use of killing the queen and having them start queen-cells, which they will in 48 hours, and take the chances of their killing the queens? When they start cells they are antagonistic to any queen, even their own queen.

Dr. Miller—How long after you put that queen in before the bees liberate her?

Mr. Abbott—I fix it so that she will be out in an hour—not to exceed an hour.

Mr. Whitney—I purchase a considerable number of queens usually, and I have been anxious to find the best way of introducing queens, having tried various methods. I heard Mr. Abbott give his method of introducing queens here, a couple of years ago, I think, and thought I would try it. I sometimes get a half-dozen queens in rainy weather. Perhaps there will be 2 or 3 days of bad weather; I can't introduce them. I know what colonies I wish to introduce those queens to, and I distribute them around over the frames and leave them there till the weather clears up so that I can introduce them, and then I remove the old queens and let young queens free immediately. I have never lost a queen, when introducing them in that way. Of course, I would do the same thing if the weather were not bad, but it is a convenience if the weather is bad, to take this plan of doing it, and it never fails under any circumstances with me. Always place the queens over the frames of the colony in which you wish to introduce them, without removing the little pasteboard or cork, and when you get ready

American Bee Journal

to introduce them, remove the old queen from the hive and let the queen free immediately; and, as Mr. Abbott has said, you do not then stop the production of bees in the hive. The old queen goes on laying all the time up to the very moment of her exclusion from the hive, and the new queen takes her place. I think it is the best method I have ever known.

Mr. Wilcox—If you could not place her over the colony, would you place her between the combs?

Mr. Whitney—Yes, you might do that; but I have placed the cage at the entrance of the hive. My hive-entrances are wide, but just about high enough.

Dr. Miller—You could not do that in cool weather.

Mr. Whitney—Not very cool weather, no. I would not do it in cool weather. But I merely mention that I have done it in warm weather, but with my kind of hives there is scarcely any necessity for it.

Mr. Wheeler—What do you do with the attendant bees—bees that are with the queen? Do you kill them?

Mr. Whitney—O, they take care of themselves, or the other bees will take care of them. I don't pay any attention to them at all.

Mr. Abbott—Let them alone. They will do no harm.

Mr. Kimmey—You say turn the queen loose immediately; make the opening so that she can walk right out?

Mr. Whitney—Yes; run a pencil through and puncture the queen-candy and let the queen out. She will usually remain in the cage for several hours, and the bees will go in. They do not often run out immediately, but I will let them free and turn them right out. Ordinarily they remain in the cage for several minutes, or hours, possibly.

Mr. Hutchinson—I think that the idea of letting the queen free at once without leaving the colony queenless until they find out they are queenless is probably all right. The only reason that I could see in keeping a queen caged 2 days or more before letting her out is that sometimes it seems as though the mood of bees changes. You will come to a hive sometimes with a queen-cage in it, and you will find bees sticking right over the cage like so many burdocks, and perhaps the next day they have changed their mood and are walking peacefully over the cage. If you release the queen when they are inclined to bother her, they might kill her. I think it is much better never to let a colony know they are queenless. Don't leave them queenless long enough so that they find it out. I introduced a queen last fall after the honey-flow had ceased, when it is somewhat different. I went over the hives and found the queen. As soon as I would find the queen I would kill her and open that cage at one end and fill it perhaps an inch or an inch and half with sugar candy, and put it back in. I do not suppose those bees knew they had a new queen, and out of the 40 I lost 2 queens. Those were strong hybrid colonies.

Mr. Moore—Mr. Hutchinson, what would you do now to save the queens to those 2 strong hybrid colonies, in addition to what you did before?

Mr. Hutchinson—I don't know that I could do anything.

Mr. Whitney—I have introduced a strange queen to a queenless colony and she was accepted immediately. There would be a buzz of bees all over the frames and down through the hive the moment she struck the top. An exception, of course; that would seem to be a sort of freak of the bees. I don't know why they accepted her so suddenly or willingly, but they did.

Mr. Taylor—They will almost invariably do that in the spring.

Mr. Abbott—Never turn a queen free if you have one or more cages, if the bees are not walking around naturally, no difference whether they have been on there 1 day or 3. Never turn a queen free under those circumstances. Simply close up the hive. You have the old queen laying. That is the advantage of having a queen on top. Tomorrow, if all is quiet, and they are walking around naturally, hunt out the old queen. If they have had 48 hours and have started queen-cells, then if you can't put her in, it leaves another day to work on the cells.

Dr. Miller—I want to say just a word on introducing as Mr. Abbott advises. I think I objected at one meeting here that there was some delay in doing that way, but a good deal of experience since has made me appreciate very much the advantage of having a queen in the hive some time—that is, the new queen in the hive—some time before the old one is removed. As probably all here know, it is not an easy thing to introduce a virgin queen, and since that time I have introduced a good many virgin queens, using simply the advantage that Mr. Abbott speaks of, of allowing that there is just a little advantage in having the new queen get acquainted while the old queen is in the hive. When you take away the old queen you are throwing them into an abnormal condition and they are likely to show fight. When she is put in the hive beforehand, they are indifferent to the new queen. I don't know if it is because she gets the scent of the hive, or for any other reason, but I do know that a virgin queen, or any other queen that has been imprisoned in the hive for some time while the old queen is present, will be accepted kindly if freed by the bees a short time after the old queen is removed.

Requeening or Superseding Queens.

"Shall we requeen colonies having old queens, or let the bees do the work of superseding?"

Dr. Bohrer—It is questionable when a queen may be considered old. I have had queens 4 years old that were very prolific and laid as many eggs as any queen I have, and I think it would be policy for a bee-keeper to watch his queens and see what they are doing. If, for any cause they do not seem to lay the requisite amount of eggs at any age, I would supersede them; but as long as the queen is fertile and in good condition, keeping the colony up, I would not molest her, even to 3 or 4 years old, because from my observation they will lay eggs until they are that old; so that there is no fixed rule about that, perhaps.

Mr. Whitney—I suppose that when one discovers drone-larvæ in worker-cells it is a pretty good indication that the queen ought to be superseded, whether she is old or young. Usually you may find those in a colony where there are old queens, but I have a case which I have written up twice, and some people questioned my accuracy. I had a queen that I found in the spring laying drone-eggs in worker-cells. She was only a year old. I thought very much of her. She was the daughter of the old queen that so much has been said about, and she looked very poor. She came out poor in the spring. I commenced feeding her bees with good, rich honey, a little at a time, each night, and within 2 weeks she was laying worker-eggs in worker-cells, and during that summer I made 4 colonies of bees from that queen.

Dr. Miller—Does Mr. Whitney think that an exceptional or a usual case?

Mr. Whitney—It was the first I ever knew, or ever heard of.

Dr. Miller—It is the last you will ever know of.

Mr. Whitney—Some say, "You must have been mistaken; it must have been a young queen that superseded the old one, and you thought it was the same old queen." The fact is that queen was clipped soon after she commenced laying, and I watched her from that time until she died, and it was the same old clipped queen. A doctor in Switzerland has taken the question up and asked me whether I was certain it was that queen. He said it was a very unusual thing, and something he never heard of. But 2 of my old bee-keeper friends were there when I took the frames out of that hive, and showed the worker-comb full, or two-thirds full, of drones, and they said, "Isn't that too bad?" Well, I thought so. I expected to have to supersede the queen, but I did not. I kept her that summer and made 4 good colonies of bees from that queen by feeding. She was a young queen, though. I would say that an old queen should be superseded, but the question is, What is an old queen? Some queens are old at a month, and others not old at 2½ years. It depends upon how hard the queen has been worked. A good queen you might keep 2 or 3 years, and with a poor honey-flow she would not exhaust herself for 3 or 4 years.

Mr. Hutchinson—What I want to know is, shall *we* do this work, or shall we leave it to *the bees* to do it? Who has been at work superseding the queens themselves? Mr. France, do you supersede the queens or let the bees do it?

Mr. France—As a rule, I supersede them.

Dr. Miller—Does a queen do better work, as a rule, in her first or her second year? That will help us a little in deciding, if we can get some testimony about that.

A Member—The best queen I had last year was 3 years old. She made the record of the yard.

American Bee Journal

Mr. Taylor—My object in keeping bees is to make something out of them. I want to make the largest percent on my labor, efforts, and expense, that I can, and I think I can make more by letting the bees do the work; and nowadays I do not practice meddling with the queens except in an occasional—very exceptional case. Of course, once in a while, when I see that there is any need of a new queen, and that the bees are not likely to supersede the queen themselves immediately, I may interfere! but I let the bees do that work, and I do not believe that I could improve much on it any way.

Mr. Whitney—If you find you have an old queen, and she is liable to be superseded, perhaps in the fall, it seems to me it would be a good deal better to supersede her in August than to let the bees supersede her in October when there are no drones flying, when you are liable to have a virgin queen there, to be a drone-layer in the spring.

Mr. Taylor—That is not likely to be the case. Bees supersede their queens in the summer-time. Of course, that is the time to do it, and they seem to know that that is the time to do it. Of course, there may be exceptional cases, but I should very much dislike to overhaul 50 colonies of bees to find out whether there was one queen that needed superseding, because the bees were going to supersede her in the fall. It doesn't pay.

Mr. Whitney—Keep a record of the age of the queens.

Mr. Taylor—That makes lots of work.

Mr. Wilcox—I am astonished, and I want to know if anybody else has ever thought of such a thing as queens being superseded in October, a month or two after the season's harvest was over. I did not know that such a thing ever happened except by accident.

Mr. Abbott—I confess I am astonished. I am like Dr. Miller now. I am more astonished than he was, to think that any one would advocate at this time that we should let nature alone. Let me give you an illustration from the dairy business: The Babcock test has eliminated from the dairies of this country about half the cows that were in the hands of intelligent dairymen, because they were eating more than they produced. It is not necessary to overhaul a colony to see how old the queen is. It is unnecessary to "count the rings on her horns" as you do on a cow to see how old she is. It is only necessary for the intelligent manipulator to know that there is a colony, No. 22, that is not paying its way. If 22 is not paying its way, 9 chances out of 10 the queen is responsible for the non-payment. An intelligent answer, it seems to me, would be to take off the head of No. 22's queen and put one in there that you thought was better. That would be improving on what we call the "natural method," just as the dairy people by selection have improved the Jersey cows and the Holstein cows until they have nearly doubled the butter-production of the Holstein herds. If they can double the butter-production of the Holsteins by careful selection, can not the bee-keepers and queen-breeders eliminate the poor queens and double the production of the colonies of bees in the country in the same way? It seems to me we can. This is an age of progress and scientific investigation, and we ought to take advantage of it, it seems to me. Take the heads off the queens whose colonies are not paying their way.

Mr. Taylor—I do not like to take up the time of this Association in talking. I like to say a word once in a while, but I do not like to talk so much. If you are willing to bear with me a few minutes, I will try to explain this thing that Mr. Abbott seems to be entirely astray on. Now the two cases are not parallel at all.

Dr. Miller—Correct.

Mr. Taylor—I am glad you are with me, Doctor. They are not parallel at all. It will take me 2 or 3 minutes to explain why they are not parallel. Take cattle. I suppose originally they were in a wild state, and they had long horns and they were fleet of foot, and they had great courage, and they were rustlers. That is, they were fitted to their environment. They were so [illegible]ected and so developed that they were able to survive under the hard circumstances in which they were placed. They were able to fight. They were able to escape their enemies by flight, when it was really necesssary. They were able to hunt their food in difficult places. Now, then, suppose Mr. Abbott had some of those cattle and he wanted to develop them in the line of fighting and rustling for their food and fleeing from enemies, and this sort of thing. Would he be so particular about picking out animals that were not fleet and not fighters? Why, no. He would not expect to develop them very much. They have been developing for ages and ages. The weak ones have gone down always. They could not get food. They could not escape their enemies. They could not repel their enemies, and they have developed, I may say, to the highest possible stage of that sort of existence. Now take bees. The bees have not been developed as fighters particularly, except what was necessary to keep out certain enemies, but they have been developed from the very first for the production of honey, because upon that alone has the existence and continuance of the race depended. Now I know it is against the generally received opinion among bee-keepers, but bee-keepers are all astray in this everlasting talk about improving the honey-gathering qualities of bees. Why, we can do a deal better than that. They are developed. Of course, we may do a little something in the way of increasing that, but we perhaps better do it negatively. We ought to let those that are not doing well perish of themselves, as they will. We make a mistake in nursing up those that are not able to survive of their own efforts, and feeding them and trying to get them through the winter, and all this sort of thing; but if we turn our attention to developing bees in the way of right capping of honey, in the way of making white comb honey, in the way of properly filling their sections, making straight combs—for there is quite a difference in that— and in some other points that I might mention if I could take the time to do it, I tell you we would make a big improvement in bees, for the reason that the bees have not found it necessary to develop in these lines. It didn't make any difference to them whether the comb was white or dark, or what was the matter with it, only that they had honey where they could get it. Now I say, if I had any influence among bee-keepers I would have them turn their attention to doing something that there was some prospect of their being able to acomplish.

Dr. Miller—I want to apologize to Mr. Taylor for agreeing with him. [Laughter.] I am very sorry I said a friendly word toward him. Mr. Abbott, I think, switched off entirely from the question, and when Mr. Taylor followed and drove the wild cattle, he went still farther. The question was raised whether it is better to allow the bees to supersede, or for the bee-keeper to take the matter in his own hands. Then Mr. Abbott raises a very important question and he did not say too much about that, and I am with Mr. Abbott and dead set against Mr. Taylor, that he can not improve the bees. But they are both away from the question. The question is not whether we are going to improve our bees, but whether, with the bees we have, it is better for us to take the matter of superseding into our hands or leave it in the hands of the bees. I regret to say I am with Mr. Taylor in thinking it is best to leave it to the bees! [Laughter.]

Mr. Wheeler—I stand for Mr. Taylor.

Dr. Miller—Keep to the question now.

Mr. Wheeler—No, I think for the benefit of the convention, if you will allow us a word about this very important question—

Dr. Miller—Yes; but let us finish this other question first, and then go to that.

Mr. Wheeler—Mr. Taylor and Mr. Abbott have been talking on a question that I think is very vital to bee-keepers.

Mr. Todd—Take it up after lunch. It is a big question they are discussing.

Mr. Wheeler—Just as you people say. I would like to say a word about the requeening of bees.

Mr. Taylor—I would suggest to wait until it comes up. We will have it up after this, I presume.

Mr. Whitney—I simply wish to reply to Mr. Wilcox in regard to superseding. Perhaps I made a little strong statement, but when I close up my hives with a clipped queen and in the spring I find a young queen with two good wings, I conclude that the queen has superseded.

Mr. Wilcox—I asked that question for the interest of the published report, not particularly for the bee-keepers present, but it will be read by the people all over the world, and I did not want it to appear, unless it was true, that the queen was superseded in October. I did not know it was.

The report of the Committee on Resolutions was read by Mr. Hutchinson, which, on motion, was adopted.

A photograph was taken of those

American Bee Journal

present, and then an adjournment until 1:30 p. m.

SECOND DAY—AFTERNOON SESSION.

After calling to order, Mr. Lyman described his management of the hive during the swarming and honey season.

Dr. Bohrer—What is the principal advantage you claim for that arrangement?

Mr. Lyman—It keeps the bees all at work in the front brood-chamber undisturbed, and at the same time prevents swarming. In my experience, after you make this change, there is no danger whatever of the bees swarming for at least 21 days.

QUEEN FERTILIZATION AFFECTING DRONE-PROGENY.

"Does the fertilization of the queen affect her drone-progeny?"

Dr. Bohrer—I wrote that question, and the reason I did so was not to make an attack upon any queen-breeder at all, nor upon any author, but to call attention to what I regard as an error. I will name the gentleman, and I regard him as a high-toned gentleman, and a very honorable man—stands so, I think, before the bee-keeping fraternity throughout the United States and everywhere he is known. I have reference to Mr. Doolittle. When I first commenced to read bee-keeping and study it carefully, I was attacked through the press several times. I went all the way through the State of Michigan and discussed it before the Michigan Bee-Keepers' Association, at the request of Prof. Cook. Two or 3 years ago I wrote him asking whether he had experimented any concerning that matter, that is, the effect the fertilization had upon the queen's drone-progeny. He said he had not only experimented, but he had proved my theory to be correct. Mr. Doolittle takes the position that it does affect the progeny of the queen, and I believe he says the fourth generation has produced a queen no one could tell from a hybrid. While I believe he is candid and sincere in his conclusions, the manner in which his experiments were conducted I am satisfied was erroneous. I doubt very much whether Mr. Doolittle is so situated that he can have four generations of bees and the fourth queen successfully fertilized where he is situated, on account of the fact that there are hybrid bees all around him, and on that account I think it is true that the drone-progeny is affected by her fertilization. The spermatozoa are lodged there—never escape at the will of the queen. When depositing a worker-egg she fertilizes that at will as it passes the mouth of the spermatheca. To suppose that affects the drone-progeny is to suppose it becomes a part of her system, that the spermatozoa become food and consequently part of the system of the queen. That is an utter impossibility. The revelations of the microscope prove the contrary, and I am satisfied that Mr. Doolittle, although honest and sincere in what he teaches, is mistaken, and I would not like at this time to have the idea go out that such a thing is possible, because it is not.

REQUEENING OR SUPERSEDING QUEENS.

Mr. Wheeler—Before dinner I was going to speak of the value of changing queens. We read a great deal, and it was the talk of some of the gentlemen before dinner, about when a colony showed weakness or anything the matter with it, to change queens, and by selecting the right queen you improve your stock of bees. That is right to a certain extent, but I think it is carried too far. In the spring, quite often when the bees come out of the cellar, they will fly together and are quite apt to kill off the queen. There will be a very strong colony of bees, and when I look a little later they will have their queen killed, and there is a great lot of bees, and what am I to do with those bees? They are losing their time. I will look around and find a colony withered away—a few bees with a queen. I put that queen in the colony with the colony of bees and that queen will lay eggs, when she gets started, for all the bees that are there—fill 2 or 3 hives. If she had been left with that little colony, her stock was bad and not worth saving. I think that the bees have a great influence over the queen. The care they give a queen determines how many eggs she will lay, and determines her life as long as she has her youth and strength, and I think there is a great deal too much stress laid on the point of the queen being to blame for a colony being weak and dwindling.

PROGRESS OF BEE-KEEPING.

"Have we made any progress in our industry in the last twenty-five years? If so, what is it?"

Dr. Miller—I think we have made some progress right in that very way, if Mr. Wheeler will pardon me, in trying to do something toward getting better stock. It is all very true that is makes a big difference. You put a queen into a little handful of bees or with a strong colony—she is a different queen altogether. But, after all, there is a material difference in the queens themselves, and I would deprecate the idea of trying to discourage any one from doing all he can to improve his bees by getting better stock. As far as improvement is concerned, I think we have made some changes within the last 24 hours, in our views—some of us. There is a change going on. I am very sure that I know some things I did not know 25 years ago, and I am very sure that there are some things I do not know now that I thought I knew 25 years ago. Whether it is an improvement or not I am not so certain, but there are changes going on, and when we are not standing dead still there is a possibility of our improving, so that I think the thing is hopeful that we are going on a little.

Mr. Wilcox—It is 25 years or more since I commenced attending the "Northwestern" convention and other conventions in this city, and as I compare what I have heard today and yesterday, with what I heard then, I am very emphatically of the opinion that the great mass of bee-keepers who attend conventions have made improvements, have improved themselves in knowledge. At that time half a dozen men would run a large convention. The rest knew nothing, or said nothing, anyway, and did not seem to understand fully what they heard. I am sure that bee-keepers as a whole are advancing. They are better advanced, on an average, better educated in the science and art of bee-keeping; and when he says "we" I suppose he does not mean, has there been something new learned that was never known before? but have we, the bee-keeping industry, learned anything in the last 25 years? The most of us have.

Dr. Bohrer—I was, I believe, in the first bee-keepers' convention in the United States, and I do not know but one other man now living that was in that convention. That was Mr. M. M. Baldridge. I am satisfied there is great progress in one particular. Then it was almost imposible for a bee-paper to live. Now there are 5 or 6. I hope the subscription list of the American Bee Journal is much greater than it was then. I was one of its first readers. There are other bee-papers. Gleanings has a good circulation. Mr. Hutchinson's paper has a good circulation. There are thousands of people reading bee-literature now. Now we do not call a man insane for paying $10 for a queen in order to Italianize a colony of bees. So there is progress shown in that respect.

Pres. York—I think Mr. Taylor can remember 25 years. Does he think there has been any progress made?

Mr. Taylor—Why, yes. You can't stir around 25 years without knowing something more than you did before.

Pres. York—If so, what is it? is the question.

Mr. Taylor—That would be a pretty long story if I told it. We have made a great improvement in hive-fixtures, for one thing. We get our honey in a great deal better shape than we used to. When I commenced keeping bees we would have a box made of half-inch stuff to reach across the hive.

Dr. Miller—You are going back more than 25 years, now.

Mr. Taylor—Not much more. Have a hole in one side and two pieces of glass on the end and a board laid over the hive, with a couple of holes in it; set two boxes in it under the cap on top of that board. There is quite a difference between that and the comb honey that we produce now. I might go on and tell you about 20 things of that kind.

Mr. Todd—How have the average tons of honey increased in 25 years?

Mr. Taylor—Well, they used to tell some big stories 25 years ago. One thing we have lost in—we do not get so much per pound. I have paid 20 cents per pound for honey in those old boxes, and some of it was not very good at that. A good many of us have learned a good many things, and some of us have learned a good many things that are not so, I think. But, on the whole, of course, we have made a wonderful improvement.

Mr. Abbott—I asked that question to bring out a point. It has not come out yet, so I will see if I can not get it out. I was just thinking over what

American Bee Journal

growth and progress had been made in 25 years. It is 23 since I came from the East into the West. The growth of the industry as a whole is simply remarkable, when you think of it, the way it has spread and the way it has been reaching out, the growth of a factory here, a factory there, and factories do not grow for the production of anything unless there is a demand. The factories sometimes push ahead and introduce new things, and I think that the manufacturers of bee-supplies have done more for the country than any other class of individuals, or more for the bee-keepers of the country than any other class of individuals, owing to the fact that they have pushed to the front. They have pushed to the front some things that are worthless from my standpoint, but they are not worthless from the standpoint of other people, and therefore they are good. If a man puts to the front anything people want, he is a benefactor. When we think about the things that were not in existence, that were not obtainable 25 years ago, that are a help to the bee-keepers today, it would take the whole afternoon to tell about them, and these things have come to us on account of the push and energy of a half a dozen men in the United States. Some of our people say they have gotten rich, and are bloated bondholders, and have got more factories and great institutions, and they have done great things, and they ought not to be permitted to speak. They have gotten rich, they have made a few dollars, but the bee-keepers of the United States are millions of dollars better off than they would have been had these people not existed.

Age When Queen Does Best Work.

"How many think a queen does her best work in the first year?"

Pres. York—All who think so, raise your hands. 3. How many think a queen does her best work in her 2d year? 9.

Dr. Bohrer—I do not raise my hand in either case, because I do not know. My observation has taught me not to be positive about that.

Dr. Miller—Maybe somebody thinks the 3d year.

Pres. York—All who think the 3d year raise your hands. I do not see any one on that.

Dr. Miller—With that in view you may add one more to the 2d year. I did not vote. I know now!

Pres. York—You wanted to see which way it was going?

Introducing a Queen to a Laying-Worker Colony

"How shall we successfully introduce a queen to a colony with laying workers?"

Mr. Wilcox—We don't want to.

Dr. Miller—One way is to introduce a virgin queen just out of the cell. Almost invariably, if not invariably, she will be accepted.

Mr. Whitney—I asked that question, because last season I had a little experience with a laying-worker colony, and I had a great deal of trouble. I was removing some queens from other colonies for requeening, and I thought I would use those to test that laying-worker colony, and I introduced one in the usual way, kept her until I thought she had been recognized by the bees, and then I let her free. They killed her in a few minutes. Then I tried another plan. I took the bees all out and shook them on the ground at a distance, carried the combs back and introduced another of the same kind of queens, and the bees came back and killed her. I took the frames out of the hive-body and put them into supers. I filled up the lower story with frames of empty comb and put the queen in, put a queen-excluder over her and set the super of laying workers right on top, and they accepted the queen. But I guess it would have been better if I had broken up the whole business. I think that is the better way.

Mr. Wilcox—I said I did not wish to, and I do not; but I have done it a great many times by introducing a comb of hatching brood and about 48 hours after introduce another comb of hatching brood, and those hatching bees usually destroy the laying workers, or they cease to be laying workers, and will accept a queen or queen-cell. It will not work every time, but it does in a majority of cases. Sometimes I try the third or fourth time. Meanwhile they are hatching their bees.

Mr. Whitney—I had forgotten that. I tried that very thing. I put in one frame and then another, but they did not produce any queen-cells at all, and I just adopted the other plan.

"What percent more honey can be secured with the Danzenbaker than with other hives?"

A Member—Not any more.

"Which is best, to increase by natural swarming or artificial?"

Dr. Miller—It depends altogether upon circumstances, the man and his desires.

Mr. Abbott—Locality?

Dr. Miller—Yes; a great many things come in.

Hives in Cellar—Putting Out Bees.

"Should hives be set on an incline forward in the cellar? What are the conditions indicating the proper time to set them out in the spring?"

Dr. Boher—Yes, I would say to the first; and second, any day in March that is warm enough for the bees to fly out. That is in central Kansas. Farther north it would perhaps be too soon.

Mr. Taylor—As I set them I would not incline them. I set them directly up one on another. As to taking them out, Mr. Wheeler speaks of when he sets them out, they gather into the hives that are not their own. I can tell him how to prevent that. Do not take them out when it is warm enough for the bees to fly. Take them out rather early in the season, and taken out when it is too cold for them to go out of their hives. I generally take them out about the last of March and they are quiet, just as quiet out there on their stands as they would be if they had been there all winter; and when it becomes warm enough for them to fly they begin to fly just as they would in the spring if they had been out there in the winter, and we have no difficulty with their "drifting," as it is called, or swarming out, or anything of that kind.

Mr. Thompson—I would like to ask, in the case of drifting in the spring, is there danger of carrying foul brood at that time if there is any foul brood in the yard?

Mr. Taylor—I don't know, but I should think very likely there would be.

Mr. Kimmey—Two years ago I took my bees from the cellar, carried them out and put them on the stands on a bright, warm, sunshiny day. Immediately upon my moving them out, I narrowed the hive-entrances so I thought I would prevent any robbing, and they flew out and went back of their own accord, seemingly every bee in its proper hive. Last spring I took them out on a cool day and they staid out 2 days. I took them out Friday, and on Sunday morning the air was full of bees, and they "drifted" right into that corner of the yard, and this corner had scarcely any. That is an actual experience.

Mr. Taylor—Locations must differ.

Mr. Wilcox— I will say, in answer to that question, I agree with Mr. Taylor emphatically. I put my bees into the cellar without bottom-boards, and consequently they stand level. If the bottom-boards were on I would prefer they should be slanting, so that the bees in a warm spell might clean out the dead ones more easily. But in carrying them out in the spring I find it more convenient to move them while the temperature is going down. For that reason I carry them out between 4 o'clock and bedtime, and if they fly a little before dark all the better, but if they do not, they take their chances in the morning. It may be a foggy, wet day, in which case it would be bad for them, but otherwise it is all right.

Miss Wilson—We commence carrying out ours in the morning and carry them out as fast as we can. When we close the entrance down to a small entrance we have had no trouble with their mixing.

Mr. Kimmey—Perhaps I would better say I did not close the entrances, and perhaps that is the secret. The year before I was careful to close them, but having carried them out and leaving them from Friday to Sunday, left them open. I have the bottom-boards off all winter.

Mr. Taylor—In regard to closing the entrance, I think it is of prime importance that the entrance be closed up to say an inch just as soon as they are set out. As surely as you leave the entrances wide open, when a warm day comes robbing will be begun; but if you close them up to about an inch, you will never hear anything about robbing.

Mr. Pease—On that same theory, setting bees out in the spring and closing the entrances to prevent their robbing or drifting, as I understand the question, if bees are wintered outdoors, with what we call a small opening, in the spring when our bees come out, does the same theory apply to close the entrance to prevent bees from drifting or mixing when they take their flight in the spring?

Mr. Taylor—They are not apt to drift if they are out all winter.

American Bee Journal

Mr. Whitney—With me, I never close the entrance, but mine is a double-wall hive, has a subway, and I do not have to close it in the spring or any time in the winter. It stands out all winter and I do not have any trouble with their drifting or going to other hives when they come out in the spring, because they come out always when it is warm enough during the winter any time.

The Best Super.

"What is the best super for comb honey?"

Dr. Miller—T-super.

Mr. Taylor—I would not have one on my place.

Pres. York—What does Mr. Taylor prefer then, a section-holder super?

Mr. Taylor—No, not exactly; I want a wide-frame, single tier.

Mr. Wilcox—That is mine exactly, for my locality. I think if I lived where Dr. Miller does I would not care so much for it. The reason I prefer the wide frame is because the top of the section is covered, and the bees can not fill it with propolis. They surely would in my country and they surely would not do it with white clover.

Pres. York—How many prefer the T-super? 4. How many prefer the ordinary section-holder super without a top-bar, like the wide frame, the ordinary section-holder super? 4. How many prefer the wide-frame super that Mr. Taylor speaks of? 5. Any other kind of a comb honey super?

Mr. Abbott—What does Mr. Taylor mean by wide frame—with slats in the bottom or what?

Pres. York—As I understand, it is enclosed all around, single-tier instead of double-tier.

Mr. Taylor—Top and bottom reversing, enclose the thing. If made right they are the best thing you can get, not excepting the T-super.

Mr. Abbott—I wouldn't have them.

Mr. Arnd—How do you get the sections out of such a frame as that?

Mr. Taylor—The great thing is to get them in. There is no trouble getting them out. I can show you. What do you mean, get the frames out of the hive?

Pres. York—How do you get the sections out of a wide frame?

Mr. Taylor—Supposing this is a wide frame (indicating). Of course the wide frame is made to clasp the section so that the bees can not get much propolis in between the top-bar and the section. Ordinarily, unless it is cold weather, they will come right out, unless there is considerable propolis there. In that case the top-bar may stick to the sections a little. In that case you want to just run a knife a little between the top-bar and the sections, then take your thumb-nail and press on the section at this end and just start it a little, and take that end the same, and they drop right out.

Mr. Abbott—You will wear your thumb-nails off.

Mr. Taylor—It won't wear mine off. Everybody that works with bees ought to have thumb-nails and finger-nails. It is just as necessary as to be ingenious. You can't get supers made right in the shop. I will tell you why. The manufacturers are careful to save every sliver of their lumber, and they cut the bottom and top-bar straight across. You want to cut them the right length and then let the saw run over the bar so it is not straight. It is a little bending. Then in nailing them together you put those bends in so they will hold on to the section, and they keep the propolis out.

Mr. Wilcox—I think there is a better way to get them out than that. I would not use the wide frames if there was not. I would adopt the T-super. I have used for many years a "back," or you might call it a "push-board." I wish I could illustrate it and possibly I can.

Mr. Taylor—To get them out of the wide frames?

Mr. Wilcox—Yes, sir.

Mr. Taylor—Where is your separator?

Mr. Wilcox—My separator is nailed right on to the side of the wide frames. It is a 4¼ section and a 3-inch separator, and there is a little space both above and below the separator. It doesn't extend clear to the top nor clear to the bottom. There is space enough so that a thin board, it may be wood or metal, is fastened on to the edge and sticking up an inch on each side, and then you take the wide frame with the tin separator side down, and lay it on that block so that the edge of the sections both top and bottom comes right along the edge of this strip nailed on to a little block here, or, if it is metal, screwed on. Then you push a little down on it and all your sections are pushed right up and out as far as you wish them.

"Is the T-super suitable for a beginner?"

Mr. Taylor—No.

Pres. York—It is all right for a man who has had bees for 40 years, and has written a book on them, I suppose!

Dr. Miller—I would advise a beginner, if he wants to begin with the best, to begin with a T-super.

"If the T-super is the great comb-honey super, how is it that it is not listed by manufacturers?"

Mr. Taylor—They know better.

Dr. Miller—Another question might come up on that: How is it that manufacturers list T-tins and do not list T-supers?

Pres. York—Because they want to sell them, I suppose. What do you know about that, Mr. Abbott?

Mr. Abbott—I know we have some we would like to get rid of. If the Doctor wants to make any T-supers we can furnish the tins. We have had them a long time.

Dr. Miller—I have some wide-frames I might trade for them. [Laughter.]

Advertising Honey.

"What can bee-keepers do to advertise honey?"

Pres. York—Mr. Burdette is here, who has had considerable experience in helping other organizations advertise.

Mr. Burdette—I was in charge of a press bureau that has been tried by the National Council of Horticulture, which is an organization to which applications have been sent by all of the trade associations of the seedsmen, florists and nursery men. The President of it is Mr. J. C. Vaughan. Horticulture has been taking quite a spurt in public interest in the last 2 or 3 years, and Mr. Vaughan conceived the idea of trying to give it a little impetus by teaching the public the value of shrubs and flowers, and the National Council of Horticulture has undertaken to supply the newspapers throughout the country with articles on horticulture—articles that would deal with the subject in a purely elementary way, and intended for amateurs. They are trying to get people to grow flowers and to plant shrubs in their yards. We conducted an experimental service a year ago for 10 weeks, sent articles to 2500 newspapers all over the country, and in most of those papers the articles were printed. Mr. York thought it would be possible to apply the same system to arousing public interest in honey. I do not see why it would not be possible. Horticulture, of course, appeals to more people perhaps than honey would, as horticulture appeals to more people than bee-keeping, but still everybody can be induced to eat honey, and if you put the advantages of honey before them in the newspapers, I should think it would help broaden the market. I have outlined in a letter to Mr. York a plan based on the experimental service that we conducted for the National Council of Horticulture, to send out to the newspapers about 4 articles every 2 weeks for a period of 20 weeks. That would be practically the same amount that we distributed along horticultural lines, except that it would extend over a longer period, not to give them so much matter at a time, and by keeping a check on that, a check of results, it would be very easy to determine what its value would be to the bee-keeper. We can find out just how many newspapers use that matter, and then the bee-keepers themselves could tell what effect it had upon the public, and it would be a very simple matter to determine just how far that method of publicity could be used to benefit the bee-keepers. Mr. York asked me to come here and explain this to you; it is pretty hard to explain in detail, and I am sorry I did not bring some of the clippings. We had great success with the horticultural matter. The Chicago Tribune published all we sent. The Daily News did also, and practically all the large newspapers all over the country we sent it to were glad to get it, and it seems to me similar matter might be gotten up about honey which could be used with equal success.

Mr. Taylor—I would like to ask a question. You say you are highly successful in this advertising. In what did your success consist?

Mr. Burdette—We succeeded in getting the matter in the newspapers all over the country. The seedsmen seem to be of the opinion that it helped them decidedly.

Mr. Taylor—In what way did it help them?

Mr. Burdette—It helped them by increasing the public demand for seeds and shrubs.

Mr. Taylor—Was it advertising seeds or novelties?

American Bee Journal

Mr. Burdette—Practically old stocks.

Mr. Taylor—Weren't people pretty well advised as to old stocks?

Mr. Burnette—They certainly were not. The newspapers seem to believe what the people want is elementary instruction in horticulture. The fact is, most people don't know much about it.

Mr. Taylor—Did the instruction consist in directing as to gardening, as to plant-

Mr. Burdette—Simply general instructions.

Mr. Taylor—Not particularly as to purchase of seeds, simply how to take care of the plants?

Mr. Burdette—What plants are suitable for certain places. One article might be how to make a backyard garden, what kind of shrubs or perennials to plant, and how to take care of them. So about the color of the blossom, the kind of soil, whether to plant in a shady or sunny place.

Mr. Taylor—And what parallel is there between advertising in that way in regard to horticulture and in regard to honey?

Mr. Burdette—Of course, we would have to advertise in a different way in regard to honey. The only parallel is generally that all advertising, if good for one thing, is good for another.

Mr. Taylor—What instruction could you give in an advertisement in regard to honey that would be of benefit?

Mr. Burdette—Of course, it is not an advertisement. It is simply a little article.

Mr. Taylor—The effect is the same. That is, you look for an effect from the advertising, though you manage to get your advertising done without paying. Still, that is all the good effect you get, because your things are advertised.

Mr. Burdette—I should say that you could publish interesting facts about honey. Tell the people some things about honey, and they would begin to think about honey. If you told them the value of honey from the food standpoint, perhaps they would buy some.

Mr. Todd—There are two kinds of advertising. There is the plain, straightforward kind of advertising and the insidious. Mr. Burdette has been directing the insidious campaign in favor of the seed-business.

Mr. Burdette—It is more in the nature of general publicity than advertising.

Dr. Miller—If Mr. Burdette knows how to put the things before the public that we would like to get before them, we can get them to want honey a little more than they do now. Do you believe you could do anything of that kind?

Mr. Burdette—Well, I do believe that I could get interesting facts about honey published in the newspapers. I suppose unquestionably that would increase the sale of honey. I do not see why it should do otherwise.

Dr. Miller—Then I would say if you could increase the demand in that way we could sell it for a higher price. Do you believe, sir, that you can get the papers to put in some suggestion that honey is a good thing, that it is more wholesome to have honey than candy for children, and that they would live longer if they had honey?

Mr. Burdette—Of course not in those words.

Dr. Miller—I am not asking that.

Mr. Burdette—Of course, I have never tried to get anything about honey in the newspapers, but we have got stuff in about flowers and plants.

Mr. Todd—Entirely different; very different.

Dr. Miller—I don't know, sir, that it is entirely different. I think he could do it.

Mr. Burdette—My personal opinion would be that I can.

Mr. Chapman—I would like to state that Mr. Hutchinson had an article in the Cosmopolitan a few years ago that was interesting enough for the magazine to publish it, and was widely read over the United States. I had friends tell me that the best they ever read about bee-keeping was that article, and such articles could be put in the daily newspapers, not as extensive as his, and they would awaken an interest in honey.

Mr. Thompson—When it comes to newspapers printing anything that is given to them on the subject of bees, I think they will print anything—some newspapers will. Perhaps there are some here that will remember two or three months ago the Chicago Record-Herald had an article stating that a bee-keeper in Iowa who had keept bees for a number of years died, and his bees commenced to sulk, they would work no longer, and they had trouble keeping them away from his remains—they followed him to the grave, they had such an attachment for him. So if a newspaper will print anything like that, you can get them to print anything, can't you?

Mr. Abbott—It seems to me very clear that here is a plan of advertising that is almost unlimited. I have had a good deal of experience. I am a newspaper man myself, and I haven't an ax to grind and I am not scared at advertising. But let me tell you about a class of advertising that is done all over this country that you have read and did not know it. There is a woman who writes from some place in Kentucky, that signs her name "Kentuckian" mostly. She is employd by the Sapolio people, and the Pearline people, and the borax people, and several other people, and she writes home articles for papers. Her articles appear all over the United States in agricultural papers in the home department, and the only thing that is in them—for instance, she will tell how to clean carpets, and the only thing that smacks of an advertisement is that she gets in the name Sapolio once in a while. The borax trust have women employed in the same way. One writes from Emporia, Kans., to the home department of agricultural papers. She recommends borax for sore eyes, and boracic acid for all sorts of things. They try hard to "work" us. They "worked" my wife for a little while. She is better natured than I am. I eliminated the borax. I said, "some good disinfectant." I eliminated Pearline and said, "some good washing powder," and of course the articles stopped when I edited them, which was a good thing. It could just as well be honey as borax, and if General Manager France would arrange with a half dozen men like Dr. Miller and Mr. York and others that I can mention, to write the articles, they can be put into 99 out of 100 of the newspapers of the United States tomorrow, without any trouble at all. That will boost honey just as high as you want it before the public, and it will double the demand for honey all over this country in a little while. I wish the National Association would just take up that kind of thing and spend two or three thousand dollars lying in the treasury doing nothing in advertising honey all over the United States.

Dr. Miller—I want to endorse what Mr. Abbott has said, and then add this: The material that we would want to go before the public, there would be in it no trick. This is no "Sapolio" business. It is all square, honest work. Here is information that the public needs, it is for their benefit. We can get it in. I believe, further, that instead of having me do a part of it and Mr. France, and so on in that way, if this work has been done for the horticulturists, the experience that has been gained in doing that work will be of immense advantage in our work. But, as I said before, I have not examined carefully the material of which this man is made. If he is put together so that he can get things into papers, I would rather a good deal get some man who is expert at it to do it than to have us bunglers go at it. It would be worth a great deal more. I don't know him at all, and I don't know what commission he may get on what he can do, but if he or his concern to which he is attached can do the work, I believe it would do us a lot of good to pay something for it.

Pres. York—I know Mr. Burdette a little bit, and anything he would prepare would be submitted to Mr. France or a committee designated to revise anything he might write. But I am satisfied that he can get things into papers that we could not at all, because he has been doing it.

Mr. Kimmey—I was surprised when Mr. Burdette came in today. I have known Mr. Burdette for a long time, but I did not know he had been engaged in the horticultural business. I did not know he knew Mr. York, nor that he was coming here. I also know something about the seed trade. Mr. York has told you that I am Secretary of the National Poultry Association, whose business it is to give a poultry show in Chicago. For every meeting I have been in the habit of employing some press agent. Last year I employed Mr. Burdette, and he is head and shoulders above any other men and women I have employed. I have a new contract, signed a few days ago, agreeing to pay him two or three hundred dollars for three weeks' work. You have all got articles in your papers. We worked it up. We have them in nearly all the papers. It is an educational business. You don't need to hide a single thing when we talk about honey. We don't have to misrepresent a single thing. Without knowing that Mr. Burdette was at all to blame for it, or had anything

American Bee Journal

to do with it, I know that the demand for seeds, bulbs and such as he mentioned last season was phenomenally large in Chicago. Every seed-house was burdened with work, and they did not have to burn a single pound of their seed nor to throw away a single one of their shrubs. It is a matter of notoriety, known throughout Chicago. I am glad it happened so that I could give this testimony in favor of Mr. York's project, and of Mr. Burdette's idea. As to just what persons shall do this work, I have no doubt—pardon me for saying it—that I could write an article just as well as Mr. Burdette can, but I have other things to attend to. I think Dr. Miller could write better about honey than Mr. Burdette. But I think to entrust the matter to a man like Mr. Burdette, who will bore Dr. Miller for facts, and go to Mr. Hutchinson and Mr. York, and then sit down and trim it all over, will do more effectual work than you can if you scatter your energies.

Mr. Whitney—I feel great interest in this matter of the education of the public with regard to the value of honey, and it is my opinion that there is nothing that we can say in a public way as to the use of honey that will not do the bee-keeper good. I have had a little experience up at our place. Our local editor there wanted to know if I would not write something for the local paper, and I wrote a few articles, and they appeared every week for 5 or 6 weeks, and people became very much interested in bees and honey, and since then I have not asked a single person to buy any honey; I could sell more of it than I can possibly produce or get. I know that publicity is a good thing for honey, if you talk right, and tell the truth.

Mr. Burdette—Some misapprehension seems to exist as to the nature of the articles that we sent out. It was not our purpose in doing this horticultural work to trick anybody. We simply filled a legitimate demand for horticultural information.

Mr. Todd—How to do.

Mr. Burdette—Yes, exactly. For one thing, we had the experience of Mr. Keeley, Managing Editor of the Chicago Tribune, who once conducted a department of gardening on that paper, and he told us it was astonishing the number of people who were absolutely ignorant of the first principles of gardening—people who would buy bulbs and plant them upside down; didn't know how to plant seed or anything of that sort. The papers all seemed to know that there is a great deal of interest in that sort of thing, and were glad to get the information that we furnished, and they understood thoroughly that we furnished it, and why we furnished it. We had a large number of scientists on the National Council—Professor Tracy, of the Department in Washington; Professor Taft, of the Michigan Agricultural Experiment Station, and Professor Irish, of Shaw's Gardens, in St. Louis. I believe there is also a great deal of interest in bees all over the country, and in honey, and that the papers would be willing to print whatever we might send out about bees and honey, provided it was written in the right way. Of course we could not send out what was purely advertising, saying people ought to buy honey. Papers could not print that unless we paid them for it; but I have gone on the assumption that there is a great deal of information about the use of honey, and facts about bees, that the public would be glad to know, and the papers would be glad to print, and the effect of those articles would be to interest the public in bees and in honey, and the indirect effect would be to increase the sale of honey. Of course, the only thing projected here is an experimental series to see just exactly what kind of articles can be prepared along that line, and what effect those articles will have. I think it is worth trying. Don't you think that there is material for articles on the use of honey and facts about bees?

Mr. Todd—Most people use honey simply raw. You might have one article acceptable about honey, but you would not have a series which would give it the force of cumulative advertising.

Dr. Bohrer—what was Mr. Burdette's question?

Mr. Burdette—I was asking if there was not material for articles of that sort. I am not very well acquainted with bee-keeping or with honey. I don't know what material there may be.

Mr. Todd—How many different ways could honey be served up?

Mr. Abbott—I want to say, without any egotism, that I can sit down here in an hour's time and write an article on honey that will go into any paper in the United States. There isn't a paper in the United States that would not publish it.

Mr. Todd—And a second one?

Mr. Abbott—Yes, sir, and a third one, and I can write a fourth one that any paper in the United States will print, and pay me money for doing it, and I can write a fifth one that the papers will take and pay me for it, and there won't be any nonsense in it. There won't be any bees following their master to the grave or anything of that kind. But you need not talk about anybody that does not know the honey-business from A to Z and has not been in it 25 years, as I have, because they can't do it. You don't have to tell people to buy honey. You have to tell people to eat honey, and then if they haven't got the honey they will come to you and buy it.

Dr. Bohrer—Isn't it also important, and of greater importance at this time than anything else, to satisfy the people that what they are getting is absolutely pure?

Mr. Abbott—Yes, sir. I could write on the purity and the probability of being adulterated. There is no doubt about the facts. The papers will publish that.

Pres. York—I do not think I could write many articles on photography, as Mr. Todd could do, but I think I could write a few articles on honey.

Mr. Clarke—Probably I might give an illustration in a small way of what people want to know about honey. I have conducted a bee-department in an agricultural paper for 7 years in Iowa. I have undertaken to answer any question anybody asks me pertaining to bees or honey, and I do not know exactly the number of inquiries that I have had in 7 years, but I think it is over 7000 in regard to bees and honey.

Mr. France—I would like to get the expression of the honey-producers on this subject. They are interested in the disposition of their product. Various ways have ben suggested, and this means of advertising is a good one. There was a fund transferred over to the National Association, and it has been waiting for effective work until we could get a system and something that would give satisfaction. To get a committee that would be satisfactory to the producers and to those who had transferred this fund to the National has been a difficult matter. That, I think, is about through with, and the next question came up wherein or how we shall begin the use of that fund to advertise and create a demand for more honey. This proposition that has just now been discussed will be one of the first that that committee will consider. Two at least of the three I know are favorable to starting such a move in the near future. Other ways have been suggested, and the more that you can suggest to this committee the better, and save your time for the convention. I believe one of the things we have got to employ, as has been done in other lines, is telling the usefulness of honey to the public. When they realize the value of it as a food, then enlighten, in some way, the public, that when they are buying honey they are getting Nature's purest wholesome sweet for their stomachs, and you have established a demand for honey.

Dr. Bohrer—And that what they will buy will be honey.

Mr. France—Yes, sir.

Mr. Burdette—I want to say I do not know anything about honey. I would not attempt to write these articles myself. The horticultural articles were all of them prepared under the direction of experts. Most of them were prepared by Professor Irish, who is in charge of Shaw's Gardens at St. Louis, one of the largest botanical gardens in the country, and they were sent to me. I simply took them—most of them were too long—I made it a rule not to send out any article of over 300 words—divided them into appropriate lengths, and re-wrote them so as to get the "feature." as we call it in the newspaper business, at the top; simply put them into shape so that the newspaper editors would not have to revise them; and that is all I did, simply to distribute these things to the newspapers in the proper form. As has been stated here, they should be written first by men who know honey; that is, the material should be supplied by those men, and all I could attempt to do would be to put that material into the form for the newspapers. There are a good many things to consider when you do that. I am a newspaper man. I think I know the way to do that, although I don't know anything about honey. That is all that I would do, and the estimate I made for this experimental work was simply putting it into shape and send-

American Bee Journal

ing to the newspapers. For preparing material it would be different.

Mr. Hutchinson—Speaking of writing some articles to do some good to sell honey, I have some honey of my own this year and I wrote an advertisement advertising that honey. I tried to write it in such a way that a man reading that advertisement would want some of that honey. A man wrote me, "I have been tasting that honey ever since I read that advertisement." That is the kind of an article we want to write for the papers; when a man reads the article he wants to go right out and get some honey and try it.

Mr. Taylor—There is a distinction I think we ought to make in this matter of advertising. That is, the difference between advertising a person and advertising a product. Now Mr. Hutchinson sold his honey because he advertised himself; he advertised the fact that he had honey to sell. It was not because he gave any new information about honey that enabled him to sell. It was because he advertised himself.

Pres. York—Mr. Hutchinson said the man was tasting the honey all the time, and not tasting Mr. Hutchinson!

Mr. Taylor—Because he had a good deal of faith in Mr. Hutchinson, and knew any honey he extracted of course would be extra-good.

Mr. Chapman—I would like to call attention to a fact that is really before the meeting here. I see by the newspapers that one of the women's clubs here is discussing the reading of Dickens' works because he always refers to eating and drinking, claiming that the references to eating and drinking cause a great many people to go out and overeat and drink. It is along this line that our friends refer to—discussing honey, referring to the fact that it is one of the oldest foods known in the world, that it has come down through the ages to be a blessing to the people, that people with delicate stomachs who can not eat sugar or syrup can still eat honey; such statements will set a person thinking that he hasn't had any honey for a good while, that he would like some now, and he goes out and buys it.

Mr. Arnd—I was a contributor originally to the fund for advertising. I move that the Chicago Northwestern Bee-Keepers' Association recommend to the National that they use the fund mentioned by Mr. France, in just such advertising as we have spoken of today.

The motion was seconded.

Pres. York—I ought to say, perhaps, before we take a vote on this, that the experiment will not cost over about $300 to make the first engagement. It is moved and seconded that we recommend to the National, or to the Directors, that the money in their hands from the Honey-Producers' League be used in such work as has been outlined here. Of course there may be other methods, used also.

The motion was put and carried.

Foul-Broody Colony Defending Itself.

"Is it a fact that a foul-broody colony defends itself against robbers with less vigor that a healthy one of corresponding strength."

Mr. Taylor—Yes, I think so. It makes them have less heart, don't care whether school keeps or not; and, more than that, there is a scent about the hive that I think attracts robber-bees. Don't you think so, Mr. France?

Mr. France—Yes, sir.

Mr. Taylor—If there is a colony that has any foul brood about it, you will notice the robber-bees are prowling around there. I don't know whether it is the scent, or whether they appreciate that the defenders are not very anxious to defend their hives. Any way, you have got to look out if you have a colony of foul brood.

Mr. France—I think Mr. Taylor has pretty nearly covered the ground. The bees seem to lack the defensive, and the odor also seems to have a tendency to warn the outside bees that there is something wrong.

Brood-Chamber in Winter.

"For wintering on the summer stands in 10-frame Langstroth hives, is it advisable to contract the brood-chamber with tight-fitting division-boards?"

Members—No.

Mr. France—That depends upon your location. The farther north you are the more you need to contract them. You do not need any of that if you are down in Missouri; and if you go into the extreme northern part of Wisconsin where the thermometer goes to 40 below, you have other conditions. There are other conditions for an outdoor winter. I want a good, vigorous queen in the fall, and more than honey enough.

Mr. Wilcox—I would say from what experience I have had in outdoor wintering that I would contract a little, but more especially put on another story, use the second story for outdoor wintering, always with 4 or 5 combs in, and of course a division-board at each side and packing behind. I think the second story is the most important part of outdoor wintering.

Mr. Jones—I would say it depends not alone upon the locality but upon the strength of the colony. With a really good young colony with plenty of bees in there, there would perhaps be no necessity of it, and perhaps no advantage; but a small colony, I say by all means to contract. I have wintered bees in Wisconsin outdoors. Up there I do not think there would be any show of their wintering if they had not been contracted.

Mr. Chapman—I believe 2-frame division-boards, in our locality of Chicago, are of great benefit to the bees. Mr. Wright, at one time attending our convention, said if you would take a super of dry extracting combs and place it underneath the hive-body where you wished to winter them, it would be far better for the bees. I have practiced that now for 6 years; placed it underneath, put a super the section-size on top of either excelsior or ground cork, and I have never lost a colony of bees. I did not lose them 3 years ago when so many were lost here, and I have my bees right on the roof of the house, where they are exposed to all the winds and weather that can be, and I think I have struck an excellent plan.

Points in Judging Bees.

"In judging Italian bees at fairs, what points should be taken into consideration?"

Mr. Wilcox—I did not ask that question, but that is just the information I want. I may say what I have done, but I don't know what I ought to do. I have considered as of first importance uniformity of markings. This, of course, speaks of Italian bees. Uniformity of markings of the worker-bees is my standard for purity. If all the bees are alike—size, color and shape—I consider it proof positive that they are pure-bred. It is the only standard I have, absolutely, in judging bees. If I had them in my apiary where I could observe their actions, then I would have additional standards, but we can not have that at the shows, consequently we must judge from the looks only. Size and uniformity of markings are the principal things. Size, however, is an uncertain standard, because the more agitation, excitement and jarring you give them the larger they will be. You go in the morning and look at the bees on exhibition and they are small, and in the afternoon they are much larger. The fact is, they have gorged themselves with honey.? So you can not depend very much upon the size, but you can upon the markings.

Mr. Jones—Wouldn't it be a little advantage for a person to get them in show condition, if he knew when the judge was coming around?

Mr. Wilcox—If size were important he could, but size is not a very important point.

Mr. Hutchinson—Uniformity is all you can go by. You can't tell by the size. If they are uniform in marking that is the best we can do.

Foul Brood Legislation.

Dr. Bohrer—It may be a mere matter of criticism upon my part to call the attention of this Association to the matter of foul-brood legislation. I understand that here in Illinois you have a law for the use of the bee-keepers of the State, but that does not clothe a bee-inspector with authority to go upon the premises of a man who may have foul brood, except at his will and pleasure. I don't know if you want to get the legislation to take cognizance of a matter of that kind. Find out and make a report of such persons as refuse flatly and absolutely to allow a bee-inspector to cure the disease or stamp it out, destroy his bees or make an effort to get them cured. If you can gather sufficient evidence, even perhaps one or two cases of that kind, where men have refused, then go to some influential member of the legislature, and some man who knows something about the business, if you can find one. We succeeded in our State in finding a man who knew something about bees and the wants of the bee-keepers. He laid it before the legislature. They were ready to hear it, when they found it was about to destroy an industry—an infant industry but growing rapidly—and we

American Bee Journal

got a law. I believe if you can go before your legislatures with something of that kind and send men who understand what foul brood means, the destruction that it will bring to the industry in the State if not stamped out—and there is no question about that, it is unquestionably spreading, and where there is any carelessness tolerated it will continue to spread—if you will lay the matter before the legislature in that shape, get an influential member that will work, you may get a foul-brood law through that will clothe you with authority to stamp out the disease. I have been twice to our State legislature and have learned something about the way these things are managed, and it depends largely upon whose hands you get it into.

GETTING BETTER CONVENTIONS AND ATTENDANCE.

"How shall we have a big attendance and a good meeting next year?"

Mr. Taylor—Advertise.

Mr. Jones—Everybody come again and bring one with them.

Pres. York—I think that is a pretty good idea, and perhaps it could be pushed a little more in the various bee-papers. Is there anything further? If not, we will stand adjourned until the call of the Executive Committee next year.

Send Questions either to the office of the American Bee Journal, or to DR. C. C. MILLER, Marengo, Ill.
☞ Dr. Miller does *not* answer Questions by mail.

Changing from Closed-End to Hoffman or Miller Style of Frame

We became interested in bees about three years ago, and now have twenty colonies in Danzenbaker hives. We want to increase to fifty or more colonies. So far we have no reason to regret our selection of the Danzenbaker hive, but we sometimes think there are other brood-frames that would suit us better. Having always to cut or break the frames apart is considered a drawback, and it occurred to us that we would fit up our next hives with Hoffman metal-spaced frames, or Miller frames, of the same depth as the Danzenbaker frames. In this way we would be able to judge which is preferable, as we have had no experience with any but the Danzenbaker frames.

The only change in the Danzenbaker body would be the cutting of the rabbet to receive the end of the Hoffman or Miller frame.

After our trial of the other frames, the hives we now have could be easily changed to suit the Hoffman or Miller frames, or should we decide to continue with the Danzenbaker frames it would only be necessary to fill out the rabbet cut to receive the hanging frames.

Our preference is to run for comb honey, and so far we consider the Danzenbaker super equal to any in use, but we are unable to decide as to the brood-frames.
MISSOURI.

Answer.—Your scheme is feasible, but it still leaves undecided the question as to the difference between the two depths of frames. Perhaps, however, you do not care for this.

Management of Swarms

On May 17, hive No. 5 cast a very heavy swarm. It was hived on foundation starters and set in place of hive No. 5 on the old stand, No. 5 being removed to a stand several feet away. Today (May 28) hive No. 5 cast another swarm. I caught the queen, clipped her wings, and put her and the swarm back into hive No. 5, from whence they came. Then I went through hive No. 5 and cut out four or five queen-cells, or what I thought were queen-cells. Now I am told by a bee-keeper that I should not have clipped the queen's wings. He says that in all probability the queen was not mated. Did I do right? If the queen is not mated, what shall I do? There is a great deal of unsealed brood in the hive from which the bees could rear a queen, but would they do so with the clipped queen in the hive? It does not seem reasonable to me that this young queen did not mate before the swarm settled. Please put me straight. WESTERN IOWA.

Answer.—When No. 5 first swarmed, you set the swarm on the old stand. Orthodox, so far. Then, at about the same time, you set the old hive on a new stand some feet away. Heterodox. Please never do that again—well, don't do it again unless you want the bees to swarm again. Set the old hive close beside the new one, and *a week later* move the old one some feet away. That will throw all the flying force of the old colony into the swarm, weakening the old colony so much at the right time that it will give up all thought of swarming. But you moved the old colony to a new stand at once, and eleven days later they had gained so much in strength that they felt competent to swarm, and it was the orthodox thing for them to swarm with the first virgin that emerged. Then you clipped the queen that came out with the afterswarm. Heterodox. She may have been fertilized, and she may not; but in any case you were running a big risk in clipping her. You returned swarm and destroyed all queen-cells. Orthodox. Then you found unsealed brood, lots of it, in the hive.

Now, look here, I'm willing to try to help you out in any of your misdemeanors, but when you get the bees to doing unorthodox things, that puts me out. After the old queen had left the hive eleven days, those bees had no business to have a single cell of unsealed brood, to say nothing of lots of it. The whole thing looks abnormal—heterodox. Where did that brood come from? Did a laying queen from some other colony get into the hive by some freakish performance after the hive was moved to its new stand? At any rate, there must have been a laying queen in the hive after the swarm issued, and if that's the queen you clipped, then all right—unless the bees swarm again. At any rate, with plenty of unsealed brood in the hive there is no immediate danger.

I don't know enough to tell you just how things are, but so long as brood continues to be sealed as worker-brood you needn't worry. If brood in worker-cells is sealed so it looks like little marbles instead of having a flat surface, then you must kill the queen and treat the colony as a queenless one.

I wish you'd tell us how it comes out.

Managing Nuclei, Etc.

1. I have ordered some nuclei which will be here about June 1. How shall I manage them for the best result? I never did any work of that kind.

2. Early in the spring of 1906 I had a nice, large swarm come out, and I hived them in a good hive. They worked well, and in about 4 or 5 weeks they sent out a swarm. On examining them, after a few days, I saw no bees in my first hive. The comb was nice and white and the hive was full of it, but the bees were gone. They had been carrying in pollen far ahead of any other bees I had. What was the matter? KENTUCKY.

Answers.—1. Put the frames of the nucleus in a full-sized hive in the middle of the hive, in the same relative order in which they were in the nucleus. Then fill out the hive at each side with frames that are entirely filled with foundation. Look out sharply for the matter of stores. The probability is that there was not a very big lot of honey in the frames of the nucleus, for it is not best to ship too heavy combs. If you have combs of honey, it will probably be a good thing to give 2 of them to the nucleus, one on each side pretty close to the brood.

2. Hard to say. The young queen may have been lost on her wedding flight, but there probably was some other trouble besides that, and I don't know what it was.

Rearing Queens for an Amateur

1. Not long ago I wrote you asking if good queens could be reared in a queenless colony, and you said, "Yes, if rightly managed;" but you did not say how, and how to do it was what interested me. Again, I asked if another plan would work. You said probably, but would advise me to take a little more trouble and have the best queens obtainable. This is what I would do if I knew how, but here again I was left in the dark. It was not curiosity that caused me to ask the questions, but because I did not know better. Perhaps I did not make my meaning plain.

2. Can good queens be reared in a queenless colony?

3. If so, how?

4. Is there a better way of rearing queens for an amateur without queen-rearing tools, when queens are wanted before the swarming season? If so, please explain.

5. Would you advise getting a queen-rearing outfit for one who would need 10 or 15 queens a year?
IOWA.

Answers.—1. One of the unfortunate things in attempting to answer questions in this department is that it is not easy sometimes to know by the question what is in the mind of the questioner. Don't you think it's all that ought to be required of me if I answer the questions that are asked?

2. Yes.

3. Remove a queen from a colony of best stock in the height of the season, and the bees will of themselves rear one or more good queens.

4. If you mean a better way than starting cells in a queenless colony, I think not.

5. No.

There, I've answered your questions, haven't I? But I may as well own up that I've purposely answered the mere letter of your questions, without paying much attention to the spirit. I always do better than that, and answer the spirit of the questions, as nearly as I can guess what the spirit is, and so

American Bee Journal

I'll do as well by you now if you forgive the answers I have made.

You don't need any special queen-rearing outfit for 10 queens a year, nor for 100. I'll tell you how you can rear just as good queens as can be reared from your stock, with no other outfit than what every bee-keeper is supposed to have on hand:

Take a frame out of the hive containing your best queen, and put in its place a frame with a starter an inch or so deep. A week or so later you will find the bees have filled the frame ¾ full, more or less, with new comb, with larvæ well advanced down to eggs around the outside edge. Trim off that outer edge that contains only eggs, leaving the larvæ. It isn't easy to be exact about this, and it isn't very particular, only don't cut away any of the larvæ; no harm if you leave some of the eggs. Indeed it is not absolutely necessary to cut off any of the comb; only that outer margin is in the bees' way. Now put your prepared comb in the middle of a strong colony from which you have removed the queen, and in 9 or 10 days cut out the cells and give them to nuclei. In about 2 weeks later you ought to find most of them changed into laying queens. You see, it isn't a very complicated matter, and needs no special outfit.

You note that I give no date as to when you are to do these things. I can't, because it may be 3 weeks later one year than another. But be sure not to begin too early. In your locality, if you were to begin in March you wouldn't get one good queen out of 20. Figure so as to give the brood to the queenless colony when bees are working prosperously in the fields. In your locality that probably means that the bees should not start to build queen-cells until white clover begins to yield, or any time later; and of course the empty frame must be given to your best colony a week or so earlier.

Now if I've failed to answer just what you want to know, don't hesitate to ask again.

Methods of Filling T-Supers

On page 995 (1906) is a discussion of the T-super by you and Frank H. Drexel, both favoring that kind of super. Like Mr. Drexel, I have blamed the manufacturers for forcing and keeping them out of the market, which I believe to be that the section-holder can be got up a little cheaper, yet when I send them a sample of mine, they get them up for the same price. The kind I use were gotten up by Elvin Armstrong over 25 years ago. He got up a hive and T-super which was spoken well of at that time by the American Bee Journal. Soon after that I learned that he had gone out of the business. About 10 years ago, I wanted to get some more of those supers, and sent to a firm for some T-supers, and after an aggravating length of time they sent me the section-holder, and I have not forgiven them for it to this day. I never put them on hives the second time.

I then sent a sample of the Armstrong to a firm in Minneapolis. That firm changed hands before I wanted more, but the pattern with the change was lost, so next I sent to another firm, and I suppose they have the pattern yet. In all the catalogs I have received for years I looked for the Armstrong T-super, but in all I found the immutable section-holder, with ever and anon words of some one that they don't like the T-super for some reasons which I think do not exist in the Armstrong super. And I know some of the objections which you urge in yours do not exist in mine. One of these is that they are liable to fall to pieces if you are not careful. Now, I don't care who doesn't use them, or who dislikes them, but I have paid out $1.00 in expressage besides losing 2 supers to get what I wanted. I suppose you and Mr. Drexel use the same kind of supers and both bank on the short time it takes you to fill them, but time has cut no figure with me, as I have but few bees and plenty of time on my hands, but, all things considered, I don't think you can distance me much.

1. I was amused by your direction how to make a super-filler, page 140, of "Forty Years Among the Bees." A queer super-filler, thought I. Miss Wilson, page 247, is the super-filler, and your super-filler is the super. It seemed to me as I read it, your super-filler was filled, and its contents to be dumped into the super.

2. It seems from you and Mr. Drexel you fill the super crosswise, while I fill the other way, and I think in the long run I can do the work about as quickly as you. You fold the sections and stack them on a board. You must take some extra time to do that or you will have a scatterment of them, and may have occasionally anyway. I fold by a section-press different from yours, but perhaps no better, and I may pitch them into a bushel basket and save time over you. Sitting as Miss Wilson does, having the starter put in, I can put it into the super quicker than she can stack the empty supers on a board. Putting the far left-hand corner section in and adjusting the tin to it, I take the next, and so on until I have the far side filled. Putting the separator in, I can put the next row in nearly as fast as I can pick them up and lay them down. It appears that you put the separators in after you have all the sections in. How you get them in except one at a time, I don't know, but perhaps you do.

3. You claim that you have seen every kind of a T-super but I feel satisfied that you have never seen my kind or you would never object to some things, such as its falling to pieces. The only way of getting it to pieces is to tear it to pieces. I could turn it either side up as I use starters only in sections.

As to section-holders, the only fault I ever raised against them was that the bees would glue them fast so that I had to tear them to pieces to get them out. I did not have them long enough to warp. How those who used them kept the bees from sticking them fast, I don't know, and I don't care to know, for I don't want them.

I had a letter from Elvin Armstrong last fall from Colorado, saying he had improved his super and was going to get several thousand of them cut out by some factory and would come in when he had sold his honey. He had several thousand pounds. He said he would bring you and me a super, and if you did not say it was the best, he would be surprised. IOWA.

Answers.—1. You are quite right when you say "Miss Wilson is the super-filler," and quite wrong when you say, "your super-filler is the super." The same word, as you well know, may mean two different things. Looking in the dictionary, I find the definition of the word "filler" in part as follows: "One who or that which fills or is used for filling. Specifically: (1) A funnel." If a boy were filling a barrel with water, using a funnel for the purpose, you would say the boy is the filler, and at the same time you would hardly dispute the dictionary that the funnel is also a filler. So while Miss Wilson was the filler, was not the implement "used for filling" also a filler? When you say that my super-filler is a super, you evidently misunderstand the whole affair. Please turn to page 148 of the book, and you will see that the super-filler is not a super at all—doesn't in the least look like a super, as you will see by the picture of a super-filler on page 189.

2. It takes less time to pitch sections in a basket than to put them in a straight pile. You are quite right in that. But please note that it takes less time to pick them off the pile when putting in foundation than it does to pick them out of the basket, because when they are piled they are always standing the same side up, always in the right position to go to the foundation-fastener, but in the basket they are all sides up, and you must take time to put them in the right position. Occasionally we may use the basket method, but we think the other way better in the long run. We've tried both ways; I wonder if you have. We've also tried putting the sections into the super your way, which, if I understand correctly, is to put the T-tins in place before all the sections are in, so that most of the sections must be put in between the tins, and that takes ever so much more time than to slip each tin under the sections after the sections are in. But to do this easily the super-filler is essential.

3. If I ever claimed that I had seen every kind of T-super it was a wild claim, certainly. There may be a dozen kinds that I have never heard of. Still, I've seen quite a few different supers.

More About Texas Sumac.

Referring again to the kind of sumac spoken of in my article on page 279, I will say that I do not know enough of botany to enable me to give a correct description of this shrub; but it is a large, rather bushy kind, seldom having many branches low down on the main body. The leaves are oblong, pointed, smooth, dark green, branching out from a common stem. The berries, when ripe, are a bright scarlet color, and hang, or rather stand, on a short, stiff bunch of stems. It begins to open its bloom about July 25, seldom varying more than a few days. The period of bloom extends, as a rule, to the middle of August. The flower buds form at the extremities of the season's growth of new wood, and are often as large as a teacup. They seem to be altogether composed of a series of small petals, each containing a nectar cup or gland. Bees alight on the bunch and work over the entire flower. It is a composite plant, yielding both pollen and honey in great plenty. The pollen is a fine creamy-yellow color, and during the first few days of its blooming season the bees seem to gather an immense quantity of it, but later they gather only honey.

I am sending some of the leaves and berries. They taste very acid, but that is not strange, for, as you know, all of this species are tannic-acid plants.

This is about all that I am able to tell about it. The natural habitat of this shrub is West Texas, though it extends to a part of the Central Texas counties. I have never met with it in Southwest Texas, though a few of this kind grew near my old home in Bee county.

The honey from it is a very light yellow or pale straw color, very thick and heavy, and fine flavored. I had a sample at San Antonio. It is, according to my experience, a most certain yielder, and if we had even one more plant its equal bee-keeping would be a very profitable business here. As it is, we get an average of 50 pounds to the strong colony, though I have managed to get 210 pounds from a few choice colonies, and I feel sure that I will be able to get a heavy yield the coming season.

I have a new system by which I am able to get the most powerful and efficient working force. This contemplates the use of two queens in each hive, though not used in the manner lately described by some writers. My non-swarming board is used for the purpose. As I stated, by its use last year I was enabled to get 210 pounds from some few colonies. I think its possibilities are very great along that line, but I am not trying to urge its use; I know that I have a good thing for my own use, at least. J. E. CHAMBERS.

Concho Co., Tex.

[The leaves sent differ greatly from those of the sumac common in the North, being only 1¼ inches in length and scarcely ⅜ in width.

By all means tell us about your plan of working two queens in the same colony.—EDITOR.]

American Bee Journal

The Caucasian Bees

I was so interested in E. A. Morgan's experience, on page 483, that I wish to say a word too.

I have been loth to say anything in praise of Caucasian bees, for so many have condemned them who have had no experience with the true Caucasian that I thought it would be powder burned to no effect. I am convinced that when the Caucasian bees have been with us long enough to know them, there will be a large number, who, at this time condemn them, will be converted to our side.

I got my first queens from the Government, and soon after I began to import direct from the Caucasus, and now have as fine a lot of Caucasian breeders as there are in this country. I have always prided my yard as being the most gentle bees to be found. But when I handle the Caucasian then I *know* they are the gentlest bees to be found on this continent. Instead of picking up the smoker to drive them back I simply blow on them and they leave as if smoke were used. If I wish to show them at any time of night they act just the same as in the daytime. The light doesn't seem to affect them in the least; no crawling on the hands as with almost any other race. I find them to be the best of honey-gatherers, cap their comb snowy white, and their sections are as clear of propolis as the old blacks. They enter the sections readily, and I have less burr-combs than with any other kind of bees.

I am trying a cross between the Italian and Caucasian, using the latter as the mother, and I have the gentlest and the finest yellow bees that can be found. If they gather honey as fast as they breed they will be all I ask. They cannot help but winter, for I find that the more quiet bees are the better they will winter. I wintered 2-frame nuclei in the cellar, and they came out without a spot in the hive. I am sure that all who will try the gray Caucasians will find them just as has been stated by those who know, and not as by those who "don't know." A. D. D. WOOD.

Ingham Co., Mich., June 8.

Discouraging Outlook

Bees are in as poor a condition just now as I have ever known them to be at this time of the year in this locality. Last fall the honey-flow was almost entirely limited to the juices of fruit and grapes, so that the winter stores were of the poorest kind. But on account of the mildness of the winter the bees got through fairly well; and in the fine, mild weather during the whole month of March, they built up well, and gave promise of fine results this summer. But, alas! the cold, blustery weather during all of April and half of May played havoc with many of the most promising colonies. Much of the brood chilled and starved. Bloom containing nectar is now plentiful, but the field-laborers are too few to collect much surplus. On the whole, the outlook for bee-men is not very bright in this locality.

H. A. SCHOPPENHORST.

Marthasville, Mo., May 24.

Successful Wintering of Bees

In reading the American Bee Journal this week it seems that we Eastern bee-keepers are in the "cold swim" with our Central and Western brothers. This is the coldest April and May that I remember, but, with it all, my bees that wintered well are in fine condition. On May 18 I had one of the largest swarms I ever hived; it filled a 10-frame hive practically full. Now I think the secret of my bees being in the condition they are, is not from feeding in the spring and fall, but because each was a strong, heavy colony in the fall, and wintered on 50 pounds of thoroughly ripened honey.

I put into winter quarters last fall 28 colonies, but during the long, cold winter they were taken with dysentery and I lost 6 colonies through that cause. Now I think I have found two reasons for the same trouble in this location—one is from honey that was gathered late in the fall (and our fall crop is very heavy here about every 3 years in 5); and also from some of the hives becoming damp, as that was part of the time that they were under snow. I notice in the early spring, in going over my bees, that the hives were pretty damp. The dampness was not due to sweat inside.

My way of wintering is this: I am a great believer in newspaper for warmth, which I used as packing for supers over the comb honey over the Hill's device, and after putting the lid on I laid quite a number of newspapers over the top of hives; and hive-covers made of heavy duck canvas thoroughly dipped in pure boiled linseed oil thoroughly tied down over the whole hive, and then a sheet-tin frame laid on top of the cover with a weight on to keep the water from the top of the hive.

I can box, on a short October day, thoroughly, 25 hives for winter, and barring dysentery, which they had this year, I find that 99 percent with heavy stores will go through in any winter, which can't be worse than the past one. In all of the colonies I lost there was at least from 15 to 35 pounds of stores left. I have 16 boxes now with 2 and 3 supers for comb honey, filling fast. The rest are for extracted. I have at least 35 pounds of apple-blossom honey in one hive—the first that I ever have succeeded in getting, and I tell you it is fine. When I take it off I may forward a box to the editor.

My apiary is located in one of the largest white clover belts in Chester Co., Pa. Last year I had one colony that I run only for honey in sections, and it carried in 176 pounds of strictly white clover; all the others I run for increase, and reached to the above number of colonies from 8 stored as described for wintering. GEO. M. STEELE.

Philadelphia, Pa., May 25.

Cold and Backward Season

It is very cold and backward here. I have been feeding my bees for some time, which makes them very strong and active in spite of the cold weather. I have had 8 swarms. I put them on full empty combs and feed them every day. Alfalfa will be out in bloom in about 2 weeks, and then I look for a good honey-flow. The sweet clover is looking fine, and I am preparing for a good crop unless it stays cold all summer. E. S. ARMSTRONG.

Olathe, Colo., May 30.

Very Backward Season

The season has been very backward here. White clover is as yet not more than ¼ of a crop. Raspberry and blackberry are in bloom, the former being nearly over.

Centralia, Mo., June 4. J. K. BOYD, SR.

Feeding to Keep from Starving

I am feeding my bees to keep them from starving, although the orchard has been white with bloom. The weather is too wet and cold.

Peotone, Ill., June 1. C. SCHRIER.

"Songs of Beedom."—This is a beautiful 16-page-and-cover pamphlet, 6x9 inches in size, containing 10 bee-songs—words and music—all the songs so far written specially for bee-keepers, we believe. It is nice, as well as convenient, to have these songs all in one binding. Every bee-keepers' organization should have copies for use at conventions. They could be sold to members after using once, or held by the secretary for use at future meetings. Of course, every bee-keeper's family will want at least one copy. It is sent, postpaid, for only 25 cents, or 3 copies for 60 cents; or, we will mail one copy with the American Bee Journal one year—both for $1.10. Send all orders to the office of the American Bee Journal.

Agricultural Exhibit in Chicago

Here is something different, yet practical—a permanent exhibition of things agricultural. The idea is to have on daily free exhibition almost anything from husking mitts to manure spreaders. This practical idea has been worked out and is now an assured fact.

The exhibition will be held in the commodious new quarters recently acquired by White's Class Advertising Co., 118 W. Jackson Boulevard, Chicago. This company, of which Mr. Frank B. White is President, occupies the entire top floor of the "Electrical Building," corner Jackson Boulevard and Desplaines Street.

The exhibition hall is 88 feet by 50 feet, in the eastern half of the floor. It is light, airy, and very pleasant. Each exhibit will be enclosed by a neat metal railing, and be kept in show condition for daily inspection. A special attendant will have oversight of the articles, and will devote his entire attention to explaining their merits and uses, to visitors and purchasers.

This is an excellent opportunity for manufacturers who advertise direct to consumers, yet sell through dealers throughout the West. Chicago is a great trading center, and many

excursions daily bring great crowds of pleasure-seekers, dealers and business-men from all parts of the Ohio, Missouri and Mississippi Valleys. If they know of this exhibition many will visit it, learn the good points of the articles they are interested in, and make arrangements for purchase.

Being thus represented also saves manufacturers the expenses of a Chicago office and a special salaried representative.

The sizes of spaces run in multiples of 5 square feet, from 5x5 up to 10x20 or more, as desired.

An attractive folder entitled, "WOULD YOU LIKE TO HAVE YOUR GOODS ON DISPLAY IN CHICAGO AT A VERY LOW COST?" will be mailed free by White's Class Advertising Co., to any one. It has a map of Chicago's business section, with railroad depots, hotels, prominent clubs, elevated railroads, etc. It also shows a large ground-plan to scale of the Exhibition Hall, with full, detailed explanations.

Our readers, when in Chicago, are urged to visit this novel exhibition. They will be courteously received, and all questions answered by the gentleman in charge. Much that is profitable can be learned from the exhibits of new, novel, and practical articles that relate to agriculture.

American Bee Journal

Mr. Hasty's Afterthought

(Continued from page 536)

rect, no doubt. Why? On the whole it is a little surprising that as high as 42 percent should so disappear in 20 years. That's a bad, big rock on which efforts to breed the non-swarming bee are going to go to wreck. All'ee same, boys, breed that non-swarming bee. In choosing your "timber" to start with, choose some totally disinclined to swarm, if you can find such, and some not totally, but only *somewhat* disinclined. And with both sorts great care about vigor should be exercised all along—everything inclining to peter out like the above, to be thrown overboard at once.

The puzzle why colonies with 40 pounds of honey don't swarm seems to me to be an easy one. Abnormal. Normal colony uses up the honey rearing young bees, and don't have 40 pounds in swarming-time. Such bees dreadfully lethargic in disposition—else queen a poor one, I ween. Page 392.

Back Numbers One Cent a Copy.—We have quite a stock of numbers of the American Bee Journal running back for several years, which we will mail at one cent per copy so long as they last. Send as many cents as you wish copies. We have them complete since Jan. 1st of this year. If desired we will send all the back numbers of 1907 and to the end of the year for only 50 cents. First come first served.

Amerikanische Bienenzucht. by Hans Buschbauer, is a bee-keeper's handbook of 138 pages, which is just what our German friends will want. It is fully illustrated, and neatly bound in cloth. Price, postpaid, $1.00; or with the American Bee Journal one year—both for $1 75. Address all orders to this office.

ITALIAN BEES FOR SALE

I have 50 colonies of all Italian J. L. Strong stock and Quirin's. All are in good condition in new Danzenbaker hives. Price $4 50 per colony f.o.b. here. Satisfaction guaranteed.

BERT GANDER,
23A4t PANORA, IOWA.

3-Banded Italian Queens

J. P. Moore or my own strain. My apiary is stocked with thousands of choice drones that are not kin to my breeding queens.

Queens, $1 each; dozen, $10

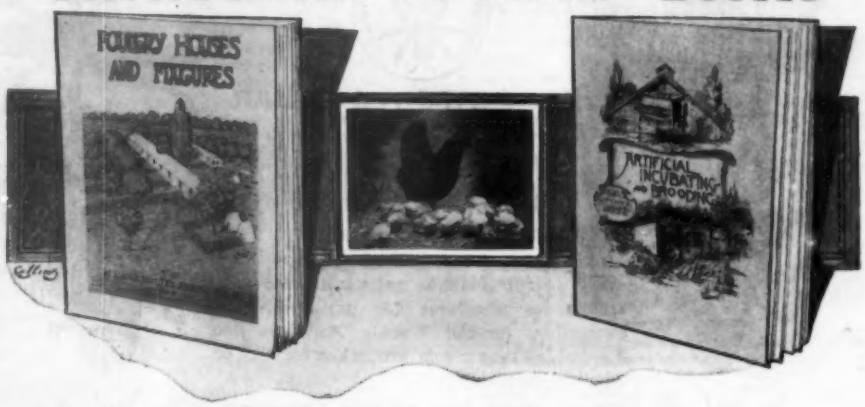
I guarantee satisfaction, and superior honey-gatherers. W. M. Parrish,
23Atf R. R. No. 8. LAWRENCE, KAN.

ITALIAN QUEENS

That are bred from the best stock this country can produce Bright Golden and 3-banded Queens ready to ship May 20. I am now booking orders which will be filed and filled in rotation. After May 20 all orders will receive prompt attention. Untested Queens 60 cents each: 6 for $3.35, or 12 for $6 50. Tested, $1 00, or 6 for $5.50. 2 frame nuclei with Young Queen after June 1, $2.00 GEO. W. BARNES.
15A26t Box 340. Norwalk, Ohio.

"It is continuous advertising that impresses the public with the stability of a firm

PRACTICAL POULTRY BOOKS



For Sale or Free as Premiums

(postpaid) for sending New Subscribers to the Weekly American Bee Journal; or we will club them with the Bee Journal, as follows:

For each NEW yearly subscriber to the American Bee Journal (at $1.00) that is send us by an already paid-in-advance subscriber, we will allow 25c to apply on any poultry book in the list; or, for $1.10, we will mail to any one the Bee Journal a year and the last book mentioned in the list; for $1.35 the Bee Journal and any one of the 50c books; or, for $1.80 we will send the first book and the Bee Journal a year. Send all orders to the address as given below,

SUCCESSFUL POULTRY KEEPING Contains, we believe, more and better practical, reliable information on the subject of "Poultry for Profit" than any other book published. Gives the cream of established facts. Compiled by the editor of the RELIABLE POULTRY JOURNAL, who has given many years of careful study to the poultry business. 160 pages, nine by twelve inches, illustrated. **Price $1.00**

POULTRY HOUSES AND FIXTURES Shows plans of all styles of low-cost, practical and labor-saving houses, designs for inside fixtures, such as nest boxes, drop boards, etc., also roosting coops and coops for young chicks, and all necessary appliances for the poultry yard. It is the most valuable and up-to-date book of the kind that has been placed before the poultry public. Used as a text book at Cornell University. 96 pages, nine by twelve, ill. **Price 50c.**

ARTIFICIAL INCUBATING AND BROODING Solves all problems of artificial incubating and brooding. Tells how to obtain strong-germed, fertile eggs, how to operate incubators and brooders, grow the greatest percentage of chickens, etc. Results gained from practical experience. 96 pages, nine by twelve inches, illustrated. **Price 50c.**

THE CHICK BOOK Tells how to obtain good hatches under different conditions, with hens and with incubators; how to feed and care for chicks of all ages, with hens and in brooders; how to feed for breeders and for broilers and roasters; how to build coops; gives complete instruction in all work connected with successful chicken growing. 80 pages, nine by twelve inches, illustrated. **Price 50c.**

THE PLYMOUTH ROCKS Barred, Buff and White. Make money and save years of useless breeding by adopting the rules of mating followed by the most successful Plymouth Rock Breeders, with a chapter and chart on line breeding. Specialists describe clearly and concisely their methods of mating and breeding. Contains color plate of each variety. 110 pages, nine by twelve inches, illustrated. **Price 50c.**

EGGS AND EGG FARMS Is made up of articles from experienced and successful breeders, giving methods of housing, breeding, rearing and feeding to increase egg production. The lengthy chapters on pedigree breeding will be found invaluable to breeders of exhibition or utility fowls. 96 pages, nine by twelve inches, illustrated. **Price 50c.**

THE LEGHORNS The best illustrated standard of all varieties of the popular Leghorns. Mating schemes clearly described. You cannot afford to be without this valuable information. Color plate of S. C. White Leghorns. 78 pages, nine by twelve inches, illustrated. **Price 50c.**

ASIATICS A work on Brahmas, Cochins and Langshans. Contains "inside" information necessary to success, and impossible to secure elsewhere. Contains standard and ideal charts for all varieties. Color plates of Buff and Partridge Cochins. 100 pages, nine by twelve, ill. **Price 50c.**

DUCKS AND GEESE Gives all details of hatching, rearing, fattening and marketing. Contains the actual labor-saving methods followed on the great duck ranges, and by farmers who make duck and geese growing profitable branches. 68 pages, nine by twelve, ill. **Price 50c.**

TURKEYS Every detail of the turkey business explained fully and clearly. It solves comprehensively the different branches of the market and standard-bred turkey industries. Written by the world's foremost turkey growers. Contains color plate of ideal Bronze turkeys. 84 pages, nine by twelve inches, illustrated. **Price 50c.**

THE BANTAM FOWL Mr. T. F. McGrew, judge and breeder, tells how to house, feed and grow Bantams, how to treat their diseases, how to select and fit the best for the shows. The most complete illustrated Bantam book published. 72 pages, nine by twelve inches. **Price 50c.**

RELIABLE POULTRY REMEDIES Points out the causes, describes symptoms and gives simple and tested remedies for all diseases. 84 pages, six by nine inches. **Price 25c**

Send all orders to **GEORGE W. YORK & CO.,**
118 W. Jackson Blvd., CHICAGO, ILL.

American Bee Journal

Standard-Bred Italian
FREE
PREMIUM QUEENS

We are booking orders now for those **Fine Untested Italian Queens** that we offer every year **FREE** to paid-in-advance subscribers as premiums for getting **NEW** subscribers for the Weekly American Bee Journal. These orders are taken for May or June delivery.

What Some Say of our Standard-Bred Italian Queens:

George W. York & Co.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine. I introduced them among black bees, and the bees are nearly yellow now, and are doing good work. A. W. SWAN.
Nemaha Co., Kan., July 15.

George W. York & Co.:—After importing queens for 15 years you have sent me the best. She keeps 9½ Langstroth frames fully occupied to date, and, although I kept the hive well contracted to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week. CHAS. MITCHELL.
Ontario, Canada, July 22.

George W. York & Co.:—The queen I bought of you has proven a good one, and has given me some of my best colonies.
N. P. OGLESBY.
Washington Co., Va., July 22

George W. York & Co.:—The queen I received of you a few days ago came through O.K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee-keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee-line. E. E. MCCOLM.
Marion Co., Ill., July 13.

How to Get these Queens Free

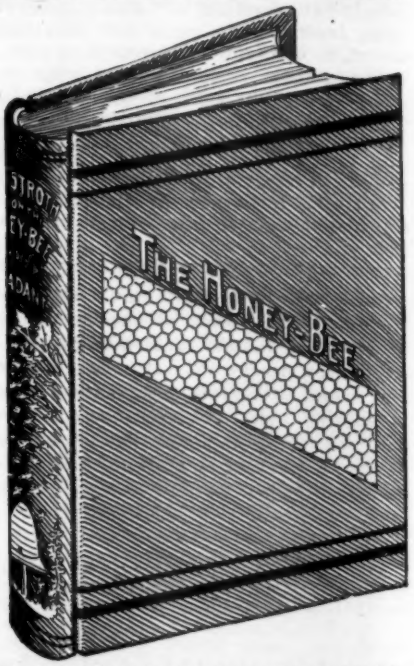
To any one whose own subscription to the Weekly American Bee Journal is paid in advance, we will mail a Fine Standard-Bred Untested Italian Queen next May or June, for each new name and address sent to us with $1.00 for the Bee Journal a year. No one can get for himself the Bee Journal a year and the Queen for $1.00. The Queen is offered as a premium for the work of getting some one else to take the Bee Journal a year. If you, yourself, want the Bee Journal a year and the Queen, send $1.50 for the two, and we will book your order for a Queen. Queen orders will be filled in rotation—"first come, first served." Address,

GEORGE W. YORK & CO.
118 W. Jackson Blvd., CHICAGO, ILL.

Langstroth on the Honey-Bee

Revised by Dadant—Latest Edition.

This is one of the standard books on bee-culture, and ought to be in the library of every bee-keeper. It is bound substantially in cloth, and contains nearly 600 pages, being revised by that large, practical bee-keeper, so well-known to all the readers of the American Bee Journal—Mr. C. P. Dadant.



Each subject is clearly and thoroughly explained, so that by following the instructions of this book one cannot fail to be wonderfully helped on the way to success with bees.

The book we mail for $1.20, or club it with the American Bee Journal for one year—both for $2.00; or, we will mail it as a premium for sending us **THREE NEW** subscribers to the Bee Journal for one year, with $3.00.

This is a splendid chance to get a grand bee-book for a very little money or work.

GEORGE W. YORK & CO.
118 W. Jackson Blvd., - CHICAGO, ILL.

Well-Bred Queens

Will greatly increase the yield of honey. Am now taking orders for **Cook's Select-Bred Queens**—to be sent as soon as weather permits mailing. Also Caucasian Queens from imported stock.

Cook's Square Honey-Jar is the best, cheapest, and most sanitary package for retailing honey. Send for circular and price-list of Hives, Bees, and useful Implements.

J. H. M. COOK
70 Cortlandt Street, NEW YORK, N. Y.

The Oldest Supply-house in the East, and only Reliable Goods sold.

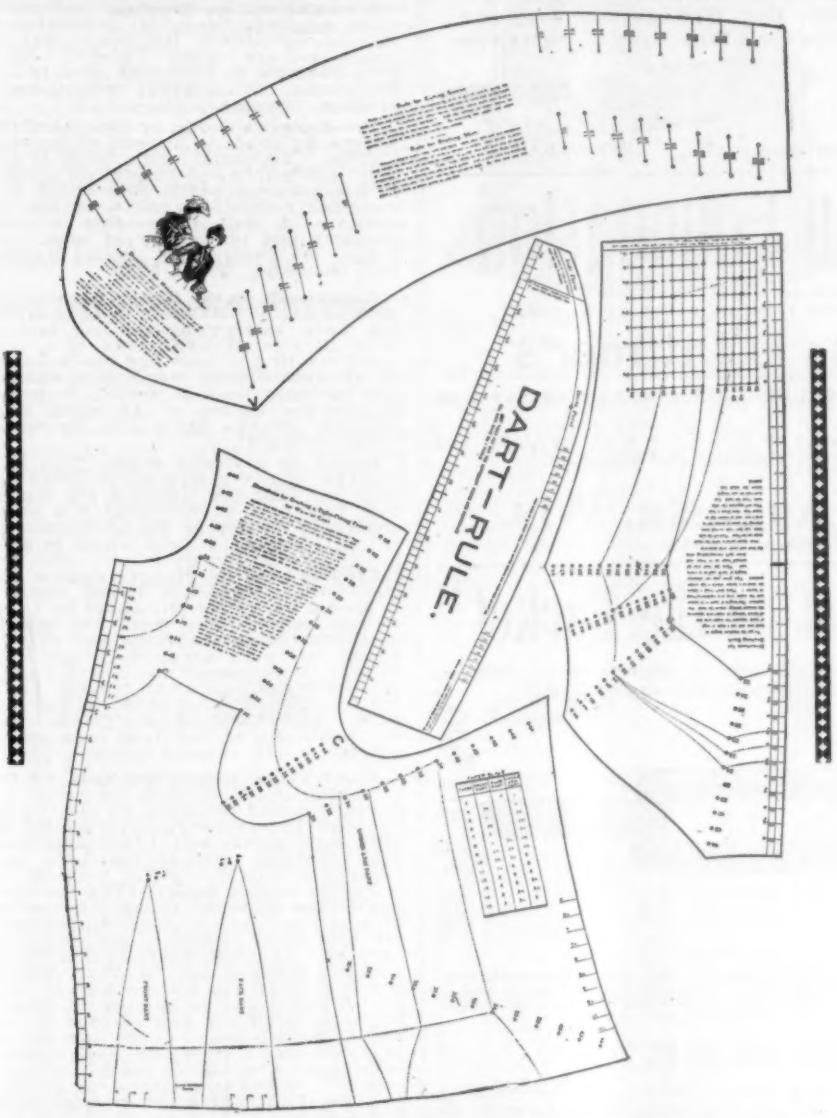
10 cents brings sample jar by mail.

17A13t Mention the Bee Journal

American Bee Journal

Something for Our Bee-Keeping Sisters

We think all ladies will agree with us in saying that every man should at least understand some business with which, in case of necessity, he could support himself and family. The wealthiest people frequently come to want, and wretched, indeed, is the man who can not earn a living after his wealth is gone. He sometimes fills the grave of a suicide. And why, in this enlightened age of progression, should not woman, as well as man, be able to depend upon her own resources? In case her husband dies in poverty, must she starve or depend upon charity? In case her husband fails to provide and grossly mistreats the woman he has sworn to cherish, must she humbly submit? **A THOUSAND TIMES, NO!** Let every woman, before she marries, have some knowledge that can be used to make her a living. Every mother, rich or poor, should make her daughters, in a certain degree, independent, by giving them some kind of a trade, and teaching them to be self-reliant. Mothers should have their daughters learn to sew, and not neglect this important part of their domestic education. The daughter so taught will not only make a better wife and mother, but will also be more likely to secure a better husband, and will always command his respect. He will not look upon her



as a helpless "know-nothing," but will know that if he fails in his duties, she can live without him, and this can only strengthen the bond between them. A thorough knowledge of dressmaking can always be turned into gold, and become the means of support for the mother and her little ones. She may never have to use this knowledge in this way, but she has a trade and can use it if necessary.

The outline cut shown herewith is a condensed copy of **THE NEW LONDON LADIES' TAILOR SYSTEM** for drafting and cutting ladies' and children's garments. For simplicity and accuracy it has no superior among the more expensive systems. Thousands of girls have learned more about drafting and cutting with this system than they knew about it after serving their apprenticeship in some of the dressmaking shops of the United States and Canada. Thousands of the best garment cutters have laid their complicated and expensive system aside, and are now using **THE NEW LONDON TAILOR SYSTEM.** Thousands have been sold at $5 00 each, but we will mail it **Free** to a paid-in-advance subscriber to the American Bee Journal for sending us **two new** subscribers at $1.00 each; or we will send it to any one with a year's subscription to the American Bee Journal, both for $1.75; or, we will mail the Tailor System alone for $1.00. Address all orders to

GEORGE W. YORK & CO.,
118 W. Jackson Blvd., CHICAGO, ILL.

Moore's Long-Tongue and Golden
—QUEENS—

Fine Select Untested Queens, $1; 6, $5; 12, $9. Tested, $1.50; 6, $8. Best Breeders, $3 50. Safe arrival guaranteed. **W. H. RAILS, Orange, Cal.**
9D18t Please mention the Bee Journal.

DOOLITTLE & CLARK

Have some fine Italian Queens of last fall's rearing that are ready to be sent out, by return mail, at $2.50 and $5.00 each.

Borodino, Onondaga Co., N.Y.
21Dtf Please mention the Bee Journal.

Engravings For Sale

We are accumulating quite a stock of engravings that have been used in the American Bee Journal. No doubt many of them could be used again by bee-keepers in their local newspapers, on their stationery, or in other ways. Also, if we can sell some of them it would help us to pay for others that we are constantly having made and using in our columns. If there is any of our engravings that any one would like to have, just let us know and we will quote a very low price, postpaid. Address,

GEORGE W. YORK & CO.
CHICAGO, ILL.

Standard-Bred Queens

Reared from Imported and Home-Bred Caucasian, Carniolan, Hall's Superior Goldens, and Leather-Colored Italian Breeders. Their bees are honey-getters. Untested Queens, $1; 6, $5; 12, $9. Select untested, $1.25; 6, $6; 12, $10. Tested, $1.50; select, $2.50; best, $5. List free. **T. S. HALL.**
11D8t JASPER, Pickens Co., GA.

Mention Bee Journal when writing.

The Emerson Binder

This Emerson stiff-board Binder with cloth back for the American Bee Journal we mail for but 75 cents; or we will send it with the

Bee Journal for one year—both for only $1.50. It is a fine thing to preserve the copies of the Journal as fast as they are received. If you have this "Emerson" no further binding is necessary.

GEORGE W. YORK & CO.
118 W. Jackson Blvd., CHICAGO, ILL.

Please mention Bee Journal when writing advertisers.

American Bee Journal

HAND-MADE SMOKERS

Extracts from Catalogs—1907:

Chas. Dadant & Son, Hamilton, Ill.—This is the Smoker we recommend above all others.

G. B. Lewis Co., Watertown, Wis.—We have sold these Smokers for a good many years and never received a single complaint.

A. I. Root Co., Medina, Ohio.—The cone fits inside of the cup so that the liquid creosote runs down inside of the smoker.

All Bingham Smokers are stamped on the tin, "Patented 1878, 1892, and 1903," and have all the new improvements.

Smoke Engine—largest smoker made	$1.50	4 inch stove
Doctor—cheapest made to use	1.10	3½ "
Conqueror—right for most apiaries	1.00	3 "
Large—lasts longer than any other	.90	2½ "
Little Wonder—as its name implies	.65	2 "

The above prices deliver Smoker at your post-office free. We send circular if requested.

Original Bingham & Hetherington Uncapping-Knife.

T. F. BINGHAM, Farwell, Mich.

Patented May 20, 1879. **BEST ON EARTH.**

Dittmer's Comb Foundation

Why do thousands of bee-keepers prefer it to other makes?
Because the bees like it best and accept it more readily.

Dittmer's Process is Dittmer's

It stands on its OWN NAME and its OWN FOUNDATION, to which alone it owes its reputation and merits.

We are now ready to make prices for next season for WORKING WAX for CASH and for full line of Supplies. Wholesale and Retail. **Free Catalog and Samples.**

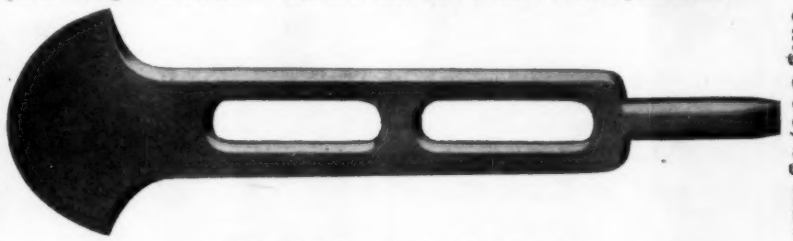
GUS DITTMER, Augusta, Wis.

Mention Bee Journal when writing.

Ideal Hive-Tool—"Best on the Market"

Bee-keepers have long needed a special tool to aid them in properly manipulating the hive-parts during the bee-season. The one shown here does the work to perfection.

Best Hive-Tool



Only 30c, by mail

(This picture is exactly one-half the size.)

DESCRIPTION.—The Ideal Hive-Tool is made of high-grade malleable iron, much like wrought iron, 8½ inches long. The middle part is 1 1-16 inches wide and 7-32 thick. The smaller end is 1⅝ inches long, ½ inch wide, and 7-32 thick, ending like a screw-driver. The larger end is wedge-shaped, having a sharp semi-circular edge, making it almost perfect for prying up supers, as it does not mar the wood.

What Some Bee-Experts Say of It.

Louis C. Dadant (son of C. P. Dadant) wrote us May 10, 1907: "Your Hive-Tool is certainly the best on the market, and after having used one of them no bee-keeper would do without it."

In the first edition (1903) of Dr. Miller's "Forty Years Among the Bees," page 58, he says: "Of all the hive-tools I have tried, I like best the Muench tool." On Jan. 7, 1907, he wrote us, saying he thought "just as much of the tool as ever."

Miss Wilson, Dr. Miller's assistant, says this of the Ideal Hive-Tool: "It is an ideal tool. In fact, I don't see how it could be improved upon. I am sure we would feel utterly lost in the apiary without it.....You will have to try one yourself if you want to know its worth."

The "Ideal Hive-Tool" Free as a Premium.

We will mail an **Ideal Hive-Tool FREE** as a premium to any present paid-in-advance subscriber to the American Bee Journal, for sending us **ONE NEW** subscription for a year at $1.00; or we will send the American Bee Journal one year and the **Ideal Hive-Tool**—both for $1.20. Price of the **Ideal Hive-Tool** alone, postpaid, 30 cents.

GEORGE W. YORK & CO., 118 W. Jackson Blvd., CHICAGO, ILL.

"In every country the successful advertiser is the continuous advertiser"

BEE BOOKS

Sent postpaid by GEORGE W. YORK & Co., 118 W. Jackson Blvd., Chicago, Ill.

Advanced Bee-Culture. Its Methods and Management, by W. Z. Hutchinson.—The author of this work is a practical and helpful writer. You should read his book; 330 pages; bound in cloth, and beautifully illustrated. Price, $1.20.

A B C of Bee-Culture, by A. I. & E. R. Root.—A cyclopedia of over 500 pages, describing everything pertaining to the care of the honey-bees. Contains about 400 engravings. It was written especially for beginners. Bound in cloth. Price, $1.20.

Scientific Queen-Rearing, as Practically Applied, by G. M. Doolittle.—A method by which the very best of queen-bees are reared in perfect accord with Nature's way. Bound in cloth and illustrated. Price, $1.00; in leatherette binding, 75 cents.

Bee-Keeper's Guide, or Manual of the Apiary, by Prof. A. J. Cook, of Pomona College, California. This book is not only instructive and helpful as a guide in bee-keeping, but is interesting and thoroughly practical and scientific. It contains a full delineation of the anatomy and physiology of bees. 544 pages. 295 illustrations. Bound in cloth. 19th thousand. Price, $1.20.

Langstroth on the Honey-Bee, revised by Dadant.—This classic in bee-culture has been entirely re-written, and is fully illustrated. It treats of everything relating to bees and bee-keeping. No apiarian library is complete without this standard work by Rev. L. L. Langstroth—the Father of American Bee-Culture. It has 520 pages, bound in cloth. Price, $1.20.

Honey as a Health Food.—This is a 16-page honey-pamphlet intended to help increase the demand for honey. The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last part is devoted to "Honey-Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey the more honey they will buy. Prices: Sample copy for 2-cent stamp; 50 copies for 70 cents; 100 for $1.25; 250 for $2.25; 500 for $4.00; or 1000 for $7.50. Your business card printed **free** at the bottom of the front page on all orders for 100 or more copies.

Forty Years Among the Bees, by Dr. C. C. Miller.—This book contains 328 pages, is bound in handsome cloth, with gold letters and design; it is printed on best book-paper, and illustrated with 112 beautiful original half-tone pictures, taken by Dr. Miller himself. It is unique in this regard. The first few pages are devoted to an interesting biographical sketch of Dr. Miller, telling how he happened to get into bee-keeping. About 20 years ago he wrote a small book, called "A Year Among the Bees," but that little work has been out of print for a number of years. While some of the matter used in the former book is found in the new one, it all reads like a good new story of successful bee-keeping by one of the masters, and shows in minutest detail just how Dr. Miller does things with bees. Price, $1.00.

"The Honey-Money Stories."—A 64-page-and-cover booklet, 5¾x8½ inches in size, printed on best quality paper. Many short, bright stories interspersed with facts and interesting items about honey and its use. The manufactured comb honey misrepresentation is contradicted in two items, each ocupying a full page, but in different parts of the booklet. It has in all 33 fine illustrations, nearly all of them being of apiaries or apiarian scenes. It also contains 3 bee-songs, namely, "The Hum of the Bees in the Apple-Tree Bloom," "Buckwheat Cakes and Honey," and "The Bee-Keepers' Lullaby." This booklet should be placed in the hands of everybody not familiar with the food-value of honey, for its main object is to interest people in honey as a daily table article. Price, 25 cents, or 3 copies for 50 cents.

While the **Present Stock** of these **BEE-HIVE CLOCKS** lasts, we will sell them at only **$1.50 each,** by express; or $2.00 for the Clock and the Weekly American Bee Journal one year. **Better order at once,** before all are gone.

The Bee-Hive Clock

A $4.00 CLOCK FOR $2.50 ... With the American Bee Journal 1 Year—Both for Only $3.00

We have originated and had made specially for our readers, a bronzed-metal Clock, called **"The Bee-Hive Clock."** It is 10¼ inches wide at the base, 9¾ inches high, and deep enough at the base to stand firmly on a mantel or elsewhere. It is a beautiful piece of work, and would be both ornamental and very useful in any house, and particularly in a bee-keeper's home.

The Clock part itself is warranted for 3 years to keep good time. So it is no plaything, but a beautiful and needful article for everyday use.

Clocks like "The Bee-Hive Clock" usually sell in the stores at from $4.00 to $5.00 each, but having them made for us in quantities enables us to offer them at $2.50 each by express, or with the American Bee Journal a year—both for only $3.00. Either Clock or Journal would make an ideal gift.

How to get "The Bee-Hive Clock" FREE

Send us **5 New Subscribers** to the Weekly American Bee Journal for one year, at $1.00 each, and we will send you this beautiful "Bee-Hive Clock" **FREE** (excepting express charges). Or, send us **4 New Subscribers** (at $1.00 each) and 50 cents—$4.50 in all. Or, **3 New Subscribers** (at $1.00 each) and $1.00—$4.00 in all. Or, **2 New Subscribers** (at $1.00 each) and $1.50—$3.50 in all.

Only $2.50, f.o.b. Chicago, by Express.
Weight, with packing, about 4 pounds.

What Dr. Miller Thinks of the Bee-Hive Clock

Busily ticking away, in the room where I am sitting, stands a genuine bee-keeper's clock (please understand that the word "genuine" belongs to the clock and not to the bee-keeper) or, as the legend upon the clock has it, "The Bee-Hive Clock." I don't know whether the idea of getting up such a clock was conceived in the brain of the Editor of the American Bee Journal, or whether he got it elsewhere, but the wonder is that such a thing was not thought of long before.

Setting aside all idea of its association with the business of a bee-keeper, there is a peculiar appropriateness in having the minutes and the hours "told off" in a case representing the home of the busy little workers. The glance at the clock, with its ceaseless tick, tick, tick, tick, can not fail to remind one that the flying moments must be improved now or be forever lost, and that suggestion is reinforced by the thought of the never ceasing activity of the little denizens of the hive, always busy, busy, busy, working from morn till night and from night till morn, working unselfishly for the generations to come, and literally dying in the harness.

Let us be thankful that the form of the old-fashioned straw hive or skep was adopted, and not that of any modern affair, patented or unpatented. The latter smacks of commercialism, but the former of solid comfort, for no other form of hive has ever been devised that contributes so fully to the comfort and welfare of a colony of bees as does the old-fashioned straw-hive. It appeals, too, to one's artistic sense as can no angular affair of more modern times. As an emblem of industry, artists have always used—probably always will use—the old straw skep.

Thanks, Mr. Editor, for furnishing us a time-keeper so appropriate for all, and especially for bee-keepers. C. C. MILLER.

Address all orders to **GEORGE W. YORK & CO., CHICAGO, ILL.**

American Bee Journal Novelty Pocket-Knife Gold Fountain Pen

All for **$3.00**

(This cut is the full size of the Knife.)

NOVELTY POCKET-KNIFE

(Name and Address on one side—Three Bees on the other side.)

Your Name on the Knife.—When ordering, be sure to say just what name and address you wish put on the Knife.

The Novelty Knife is indeed a novelty. The novelty lies in the handle. It is made beautifully of indestructible celluloid, which is as transparent as glass. Underneath the celluloid, on one side of the handle is placed the name and residence of the owner, and on the other side pictures of a Queen, Drone, and Worker, as shown here.

Worker

Queen

Drone

The Material entering into this celebrated knife is of the very best quality; the blades are hand-forged out of the very finest English razor-steel, and we warrant every blade. It will last a life-time, with proper usage.

Why Own the Novelty Knife?—In case a good knife is lost, the chances are the owner will never recover it; but if the "Novelty" is lost, having name and address of owner, the finder will return it. If traveling, and you meet with a serious accident, and are so fortunate as to have one of the "Novelties," your POCKET-KNIFE will serve as an identifier; and, in case of death, your relatives will at once be notified of the accident.

How to Get this Valuable Knife.—We send it postpaid for $1.25, or club the Novelty Knife and the American Bee Journal for one year—both for $2.00. (Allow two weeks for Knife order to be filled.)

SOLID GOLD FOUNTAIN PEN

Finally we have found a good Fountain Pen that is reasonable in price. The manufacturers of this pen say that if you pay more than $1.25 for other fountain pens, it's for the name.

This pen is absolutely guaranteed to work perfectly, and give satisfaction. The Gold Nibs are 14 kt., pointed with selected Iridium. The Holders are Para Rubber, handsomely finished. The simple feeder gives a uniform flow of Ink. Each pen is packed in a neat box, with directions and Filler.

⅔ size

We mail this **Gold Fountain Pen** for only $1.25, or for $2.00 we will mail it and the weekly American Bee Journal for a whole year.

Sample copy of the American Bee Journal free; trial trip of three months (13 copies) for 20c; regular yearly price, $1.00.

Address all orders to

GEORGE W. YORK & CO., Chicago, Ill.

American Bee Journal

TEXAS QUEENS

The Famous Honey-Producers

Texas Queens

The Famous Honey-Producers

I am booking orders now for April, May and June delivery, for **Carniolans, Italians,** and **Goldens**—equal to the best, regardless of price. PRICES:

Tested Queens	....$1.00 each;	$10.00 per doz.	
Warranted "	.... .75 "	7.00	"
Untested "	.... .50 "	5.50	"

6Atf **GRANT ANDERSON, Sabinal, Texas.**

WE SELL ROOT'S GOODS IN MICHIGAN

Let us quote you prices on Sections, Hives, Foundation, etc., as we can save you time and freight. Beeswax Wanted for Cash.

H. M. HUNT & SON,
REDFORD, Wayne Co., Mich.

ITALIAN QUEENS

Golden or Leather Colored. One colony of this strain produced 280 fancy sections in one season. Order now for delivery in season. Untested Queen, 1 00; six, $5.00. Tested, $1.50 up. Correspondence solicited.

ROBERT B. McCAIN,
2Atf OSWEGO, ILL. R.D. 1.

Queens and Nuclei

Circulars Free.

D. J. BLOCHER, Pearl City, Ill.
18Atf Mention Bee Journal when writing.

ITALIAN AND CAUCASIAN BEES, QUEENS and NUCLEI

Choice home-bred and imported stock. All Queens reared in full colonies.

One Untested Queen.....	$ .90
" Tested Queen.....	1.10
" Select Tested Queen	1.40
" Breeder Queen.....	2.20
" Comb Nucleus (no Queen).....	.95
" Untested Caucasian Queen	1.25
" Tested Caucasian Queen	1.75

Untested in May. All others ready now from last season's rearing. Safe arrival guaranteed. For prices on larger quantities and description of each grade of Queens, send for FREE CATALOG.

J. L. STRONG
5Atf 204 E. Logan St., CLARINDA, IOWA.

Angel's Golden Beauties

—AND HIS—

Bright Three-Banded Italian Queens

Have but few equals and no superiors. A fine, large Queen of either strain for $1; an extra-select breeder for $2.50. Have had 12 years' experience at queen-breeding. Address,

SAMUEL M. ANGEL
20A13t R.R. No. 1, EVANSVILLE, IND.

Your Order for Queens

Will be promptly filled. We can supply both tested and untested Italian Queens, your choice of either imported or home-bred mothers.

Our bees are bred for business; our Queens will not disappoint you. Tested Queens, $1.00 each; Untested Queens, 75 cents; $8 per doz.

J. W. K. SHAW
20Atf LOREAUVILLE, Iberia Pa., LA.

Mention Bee Journal when writing.

BEE-SUPPLIES

PERFECT GOODS LOW PRICES

A Customer Once, a Customer Always.

Now is the time for you to buy your **Bee-Supplies.** We manufacture **Bee-Hives** of all kinds. The Dovetail, Langstroth, Alternating, and the Massie Hives, we make all of them. Remember that half the work and worry of your apiary is removed when you use our goods. Every one knows the advantage of a good, substantial hive; the quality of material and workmanship in our hives are not excelled by any other make.

We have been in the business over 40 years, and know what is practical, and when you once give our goods a trial you will have none other. Remember that now is the time to get your order in for the season's supplies. Have you received our new 1907 Catalog? If not, write for it at once. You cannot fail to understand how to order just what you want from our Catalog, it is the easiest to understand that you ever saw.

No trouble to give estimates; tell us what you want.

KRETCHMER MFG. CO., Council Bluffs, Iowa.

Muscatine Produce Co., Muscatine, Iowa.
Trester Supply Co., 103 S. 11th Street, Lincoln, Neb.
Catalogs issued in English or German.

Mention Bee Journal when writing.

QUEENS

Caucasians, Italians, Cyprians and Carniolans

Prices in May and June: Caucasian—one extra best select breeding Queen, $3.00; one best imported direct from Caucasus, $4.50. Golden all-over Italians and Carniolans: One best extra select breeding, $2.00; one best imported, best Italian or Carniolan Queen, $2.50. Cyprian: one extra best select breeding, $2.50; one best imported direct from Cyprus, $3.50. Prices in July, August and September, 50 cents less than in May and June. Special prices for 50 and 100 Queens. Caucasian, Italian, Cyprian, and Carniolan Queens bred the best imported breeding Queens. The addresses must be clear: payments by postal money orders, Queens guaranteed to arrive in good condition in U. S. or Canada. To Australia, Ceylon, India, etc., $1 more.

B. HAUNSCHILD, the Queen-Breeder,
20A13t Weissbach b. Pulsnitz, i. Sa., Germany.

3-Frame Italian Nuclei

3-frame Nuclei of fine Italian bees with Tested Italian Queens, at $3.25 each; or in lots of 5 or more Nuclei, at $3.00 each. Nuclei will be shipped by express (charges not prepaid), from a point 100 miles west of Chicago. Orders will be shipped in rotation—first come first served. Address,

GEORGE W. YORK & CO.
118 W. Jackson Blvd., - CHICAGO, ILL.

Do You Like to be Stung?

What's the use wearing an old style net bee-veil that blows in your eyes, sticks to your face, and gives the bees a chance to hand you a hot one?

The Muth Ideal Bee-Veil

(75 cents, postpaid)

keeps the bees at at a distance because it is made of light indestructible wire and strong cloth. You can see through this wire as if it wasn't there; and you can smoke inside the veil all you want. It can't catch fire.

All Rights Reserved.

If you buy the has-been kind of veils

You Certainly ARE "Stung!"

You get dollars of satisfaction out of it. No doubt about this—it's the best-ever veil on the market.

Better send for one to-day—don't be a drone.

We're big people in all bee-supplies—ask for catalog.

THE FRED W. MUTH CO.

The Busy Bee-Men,

51 Walnut Street, - CINCINNATI, OHIO

Mention Bee Journal when writing.

American Bee Journal

A GREAT IMPROVEMENT
Will be found in
The
American Bee-Keeper
for 1907

It is profusely illustrated and enlarged, and contains only articles of the most practical as well as scientific nature. A special corps of the best writers has been engaged. The editors are Harry E. Hill and Arthur C. Miller, than whom there are no more practical or experienced bee-keepers in this country. We have published the American Bee-Keeper continually and regularly since 1890.

Regular subscription price, 50 cents a year. One year to new subscribers, 35 cents; three years for $1.00.

Send for sample copy and our new illustrated price-list of **BEE-SUPPLIES OF ALL KINDS.**

Guaranteed highest quality at lowest price. Address,

THE W. T. FALCONER MFG. CO.
Dept. B. JAMESTOWN, N. Y.
[Established 25 years.]

Mention Bee Journal when writing.

Headquarters for Bee-Supplies

ROOT'S GOODS

Complete stock for 1907 now on hand.

FREIGHT-RATES FROM **CINCINNATI** are the LOWEST, ESPECIALLY for the SOUTH,

as most all freight now goes through Cincinnati.
Prompt Service is what I practice.
You will **SAVE MONEY BUYING FROM ME.**
Satisfaction Guaranteed.
Catalog mailed free. Send for same.

A Special Discount on Early Orders.

Let me book Order for **QUEENS** bred in separate apiaries, the GOLDEN YELLOWS, CARNIOLANS, and CAUCASIANS.

For prices, refer to my catalog, page 29.

At Root's Factory Prices

C. H. W. WEBER CINCINNATI ...OHIO...

Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

Honey and Beeswax

CHICAGO, June 8.—Not any of the honey yield of 1907 has appeared on this market, and with the choice white grades of last year's comb being exhausted there is practically nothing to base values on other than that of history, for there is always a limited demand for honey. New white comb of good flavor would sell at 16c; no demand for other grades. Extracted is also exhausted of best grade. Beeswax is selling on arrival at 32c. R. A. BURNETT & Co.

CINCINNATI, May 23.—There is no material change in the honey market at this writing. Extracted honey is not moving so rapidly as it could, owing to the cool weather. We quote amber in barrels at 5½@6½c; fancy table honey in crates of two 60-pound cans at 8@9c. For choice, yellow beeswax, free from dirt, we are paying 31c cash, delivered here.
THE FRED W. MUTH CO.

PHILADELPHIA, June 10.—The honey market has been quite brisk for this time of the year. A number of odd lots have been cleaned out of the market. We quote: Fancy comb, 14@15c; No. 1, 13@14c; amber, 12@13c. Fancy white extracted, 7@8c; light amber, 6@7c. Beeswax firm, 32c.
We are producers of honey and do not handle on commission. WM. A. SELSER.

NEW YORK, May 21.—White comb honey is practically cleaned up, and there is very little demand at this time. There is some dark and mixed comb on the market, but no demand to speak of, and some of this will have to be carried over until next season, or sold at a sacrifice. Therefore we cannot encourage shipments of off-grades or dark honey at this time. Extracted honey is in fair demand and prices are ruling firm. There is very little new crop arriving as yet from the South, and while it is rather early, we doubt whether we will have any large shipments from the Southern States this season, as we fear there will be a short crop, judging from the reports we are receiving. There is quite a good stock of last year's crop still on the market, sufficient to last until the new crop from various states arrives. There is no change in price as to extracted honey since our last. Beeswax firm and likely to remain so for the next 2 months.
HILDRETH & SEGELKEN.

INDIANAPOLIS, April 12.—comb honey is not plentiful, but demand is slack. Fancy white comb brings 16@17c; No. 1 white, 14c; amber, 12@13c. Best grades of extracted honey bring 8@9c; amber, 6@7c. Good average beeswax sells here at $35 per 100 pounds.
WALTER S. POUDER.

TOLEDO, May 3.—There is very little demand for comb honey as is usually the case at this season of the year. Fancy white would bring in a retail way 16@17c; No. 1, 15@16c, with no demand for dark honey. Extracted is very scarce and none being offered for sale. Bees wax is bringing 28c.
THE GRIGGS BROS. & NICHOLS CO.

KANSAS CITY, June 1.—The honey market is almost bare of comb honey, and demand good; receipts of extracted are light, and demand light; we quote: No. 1 white comb, 24-section cases, $3.25; No. 2, white and amber, $2.50@$2.75. Extracted, white, per pound, 8c; amber, 7@7½c. Beeswax, 30c, C. C. CLEMONS & Co.

DENVER, Feb. 14.—Producers in this State are practically closed out of both comb and extracted honey. We have not sufficient good comb honey to supply our local trade, but have a good supply of white extracted of excellent quality. We quote strictly No. 1 white comb honey, per case of 24 sections, at $3.20; No. 1, light amber, $3; and good No. 2, $2.80. White extracted, 8@8½c per pound; light amber, 7¼@8c. Clean, yellow beeswax, 27@28c, delivered here.
THE COLO. HONEY-PRODUCERS' ASSN.

CINCINNATI, May 21.—The market on fancy white comb honey is entirely bare. No. 2 is selling slowly at 12c. Extracted, light amber, brings 5½@6c. Beeswax is selling here at $35 per 100 pounds. C. H. W. WEBER.

FOR SALE

1000 sixty-pound CANS. A No. 1 condition, packed two in a case. Cases also first-class. Will sell them cheap.

Michigan White Clover Honey Co.
29 Woodbridge St., West,
24A4t DETROIT, MICH.

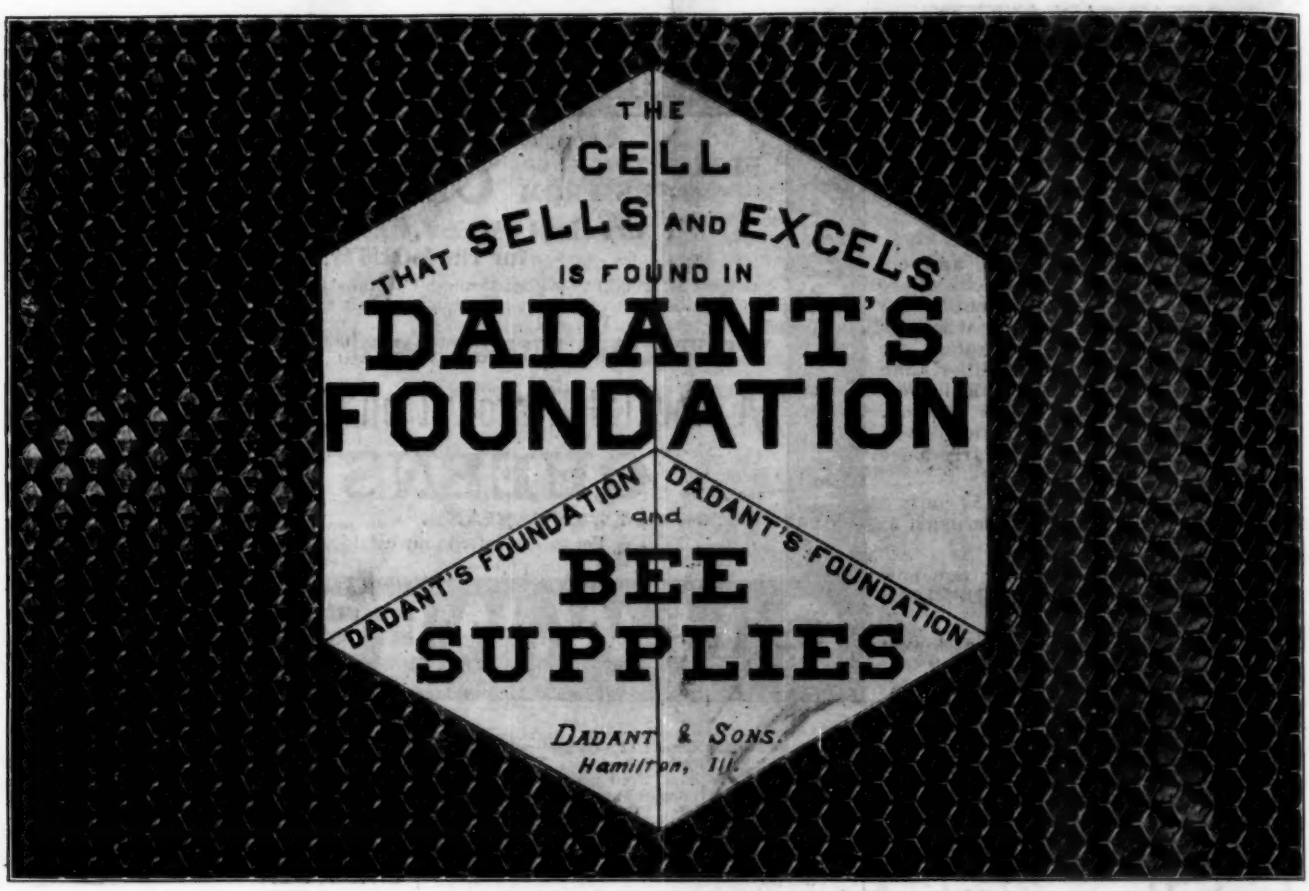
Western Bee-Keepers We Will Show You how to save money. Send for our new catalog of the best Bee-ware made.
THE COLORADO HONEY-PRODUCERS' ASS'N, Denver, Colo.
9Atf Please mention the Bee Journal.

HONEY AND BEESWAX
When consigning, buying or selling, consult
R. A. BURNETT & CO.
199 SOUTH WATER ST. CHICAGO, ILL.
Mention Bee Journal when writing.

If you want the Bee-Book
That covers the whole Apicultural Field more completely than any other published, send $1.20 to
Prof. A. J. Cook, Claremont, Cal.,
FOR HIS
"Bee-Keeper's Guide."
Liberal Discounts to the Trade.

We will Buy and Sell
HONEY
of the different grades and kinds. If you have any to dispose of, or if you intend to buy, correspond with us.
We are always in the market for
Beeswax
at highest market prices.
Hildreth & Segelken
265 & 267 Greenwich Street
NEW YORK, N. Y.
Mention Bee Journal when writing.

American Bee Journal



Marshfield Bee-Goods

talk for themselves; having bought once, you will buy again. Our orders show that. The reason for this is that nothing is used in the making of our **BEE-GOODS** that we know is not fit to go in. Why should we when we have plenty of the best as it comes direct from the forest to our mill and factory.

SECTIONS are made of the basswood timber, grown here in the basswood belt of Wisconsin.

DOVETAILED HIVES, of lumber almost clear, made accurate and smooth.

SHIPPING-CASES, strong and neat—nothing flimsy about them.

SHIPPING FACILITIES THE BEST

You will get your orders sent on very short time, as we are located on three direct railroads to Chicago there connecting with the trunk lines for the East, South, and Southwest, and some parts of the West. The West by way of St. Paul and Minneapolis.

If you have not yet received our Catalog of **BEE-SUPPLIES** for 1907, just write for it.

MARSHFIELD MFG. CO., Marshfield, Wis.

Some of Our Dealers Who Handle Marshfield Bee-Goods:

IOWA—J. W. Bittenbender, Knoxville. Gregory & Son, Ottumwa.
KANSAS.—S. C. Walker & Son, Smith Center.
MICHIGAN — Lengst & Koenig, 127 South 13th St., Saginaw, E. S. S. D. Buell, Union City.
NEBRASKA—Collier Bee-Supply Co., Fairbury.
CANADA—N. H. Smith, Tilbury, Ont.
ARIZONA—H. W. Ryder, Phœnix.
MINNESOTA—Northwestern Bee-Supply Co., Harmony.
ILLINOIS—D. L. Durham, Kankakee.
OHIO—F. M. Hollowell, Harrison.
TEXAS—White Mfg. Co., Blossom.
WISCONSIN—S. W. Hines Mercantile Co., Cumberland. J. Gobeli, Glenwood.